

THE GRAIN SUPPLY OF
THE BYZANTINE EMPIRE, 330-1025

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I. INTRODUCTION: THE PROBLEM

While man may not live by bread alone, few this side of Asia have found satisfactory ways to replace it in their daily diet. And how to replace bread must rarely have seemed more crucial a problem than it did in the seventh century when first the Persians, then the Arabs, conquered Egypt, the major source of grain for Constantinople and for the expeditionary armies of the later Roman Empire. Loss followed upon loss as Islam conquered North Africa in the eighth century, and Sicily and its granary in the ninth. It seems almost incredible that an imperial grain economy geared as closely as it was to predictable deliveries from such "food belts" could have survived their loss.

But survive it did. Even when, in 618 and 626, the emperors terminated the greater part of their grain distributions, the "many" stayed on within the walls of Constantinople. They complained, they grumbled, they protested in the God-guarded church, but somehow they fought off the invaders, somehow they battled with a new spirit, and somehow they found the means to replace first the temporary, then the final, loss of the Mediterranean grain supply.

When John Seismos, the prefect of the city, threatened at the height of the crisis of 626 to raise the price of bread from three to eight *folleis*, God did not allow him to do so.¹ The sources have little more to say directly on the matter, rendering it all the more difficult to answer the three questions of fact posed by the loss—above all—of the Egyptian granary. Of what significance was Egyptian supply to the grain economy of the later Roman Empire? How absolute was the disruption of this and other Mediterranean shipments during the seventh and eighth centuries? If the loss was really grave, and if little could be expected from provinces within the world of Islam, what adjustments were forced upon a reduced empire, now none too rich in grain-producing regions? These questions the historian can answer only by analyzing development over a wider span of time than he ordinarily cares to consider. He must glance backward in time to the fourth century, and forward to a date not far short of the Crusades.

To settle upon the year 330 as a point of departure is not at all difficult. The foundation of Constantinople, important as it was in a military sense and in a political as well, had an impact no less fundamental on what men chose to produce and trade in the Mediterranean. By creating, in effect, a new deficit area, the establishment of the capital gradually forced upon Egyptian exports a new direction and a new organization. The importance of Egypt's role begins with the first Constantine.

Long before 1453, when the last Constantine fell in defense of his city, the problems of the seventh century had been solved and replaced by others of a different nature. Later centuries, then, offer nothing so dramatic as a city's birth to serve as a terminal date, a point when old difficulties are surmounted and new ones only begin to appear. While a specific terminal date cannot be found, there is much to be said for considering—as a whole—the years 820–

¹ *Chronicon Paschale*, ed. Bonn, I, p. 716.

867, the generation of the Amorion dynasty, the immediate predecessors of the Macedonians (867-1056).

In fact, it has lately become apparent that many characteristics of the flourishing society over which the latter house ruled can be traced into the earlier years of the ninth century and even further back. The commercial vitality and urban growth implied in the sources for the reigns of Nicephorus I (802-811) and Theophilus (829-842) presuppose an agricultural surplus stored up or in the hands of men willing and able to export their grain. Even the obscure reign of Constantine V (741-775) may not have lacked achievement. One year at least witnessed remarkably low grain prices, attributed by some to high production. In the second half of the eighth century ships were at hand to mount expeditions in the Black Sea, while reserves of grain cushioned intermittent crises in Sicilian relations. Thus it is by no means incautious to assert that the Macedonians could build upon firm foundations in agriculture and commerce laid by their predecessors. The crises of 619 and 641 seem to have been met, and met successfully, generations before Basil the Macedonian set out on the adventures destined to win him a throne.²

To meet these crises, and others no less challenging, demanded of the men of the seventh and eighth centuries the greater part of their energies, and, with little left to expend on discussing what they had actually accomplished, the records they kept were scant and unsatisfactory. Two biased and laconic chronicles, a textbook of military strategy, a few saints' lives: this brief enumeration all but exhausts the list of literary materials wherein the answers to our questions must largely be found. Thus the nature of the adjustment must be traced with the aid of materials from the ninth and tenth centuries, but our examination of them will be based upon understanding that the major shifts in demand and supply were long past, that a pattern already shaped now became fixed and visible.³

To examine systematically the period after the death of the last effective representative of the Macedonian dynasty in 1025 would raise new problems beyond the scope of the present essay. The Empire survived the loss of Egypt by developing, in part fortuitously, in part deliberately, a system of supply consonant with new needs and demands. This system rested upon a certain social pattern in the village that, with Basil II's death, lost its last great defender. As control over sources of supply slipped from the emperor's hands, the means of distribution, too, began to change. In the eleventh and twelfth centuries, the markets reflect the interests not only of a potent land-owning class, but of foreign merchants, engaged in what was developing into a truly Mediterranean grain trade.⁴

² See below, pp. 105, 131, 137f.

³ From the fourth to the sixth centuries the grain economy was largely predictable, in a state of equilibrium. After the death of Justinian and until the latter half of the ninth century, the Eastern Empire fought off invaders from literally all points of the compass. The grain economy reflected the continuous emergencies of chronic political upheavals. With the gradual cessation of the worst of the invasions, demand and supply reached a new equilibrium comparable to the old, but bearing the marks of centuries of crisis.

⁴ A. R. Lewis, *Naval Power and Trade in the Mediterranean* (Princeton, 1951), p. 245, and references.

Within our chronological framework, the economic categories of demand, supply, and distribution require a systematic exposition, although the condition of the sources obviously will determine (and in this instance will hamper) the completeness of any such treatment. In general, it is far easier to analyze qualitative aspects of change than it is to assess the quantities involved in the adjustment of the Byzantine grain economy. It is possible, for example, to discover the kinds of grain consumed by the urban proletariat and the civil and military servants of the emperor, but fluctuations in the size of these groups can be determined only relatively. Since it requires knowledge of the activities of a merchant class largely ignored by the sources, it is far more difficult to explain export variations than to analyze demand. Fortunately, the political threat inherent in famine gave the emperor sufficient reason for interfering, throughout the period under review, in the equilibrium of supply and demand. Such interference frequently manifested itself in laws dealing with market organization and with waste land, and these are valuable indices of both the impact of the loss and the subsequent success of the agricultural adjustment.

II. THE GRAIN ECONOMY OF THE LATER ROMAN EMPIRE, 330-619

A careful reexamination of the sources on the grain economy of the fourth to the sixth centuries confirms a generalization familiar from previous studies of the subject. Until the very end of the period, a steady, predictable supply of grain from Egypt was absolutely essential to satisfy the needs of Constantinople and the expeditionary army in the eastern provinces.⁵

This striking dependence of the great city on its Egyptian granary was caused, in the first place, by what an economist would term an almost complete inelasticity of demand for bread. As Procopius remarked, the low income of the urban masses permitted them little or no choice among the possible foods they might consume.⁶ Bread remained an essential item in their diet, and their choice among the grains to be used for baking it was similarly limited, by pressures of cost and income, to barley or to the cheaper, inferior extractions of wheat.⁷ From these

⁵ See the comments of G. Bratianu, "Etude sur l'approvisionnement de Constantinople," *Etudes byzantines d'histoire économique et sociale* (Paris, 1938), pp. 129-181, and for analysis of sources, G. Rouillard, *L'administration civile dans l'Égypte byzantine*, 2nd ed. (Paris, 1928), pp. 121-124, and A. C. Johnson and L. C. West, *Byzantine Egypt: Economic Studies* (Princeton, 1949). To the sources discussed there may be added a paragraph on Egypt, relevant to the fourth century, from A. A. Vasiliev, ed. and trans., "The *Expositio Totius Mundi*," *Seminarium Kondakovianum*, VIII (1936), pp. 12 f., 23: "In such a way the soil [of Egypt] yields every year and is profitable to all the provinces. For Constantinople or Thrace is for the most part fed by Alexandria; likewise, the eastern regions, especially on account of the army of the emperor and the war with the Persians, because no other province can suffice but the divine Egypt." There were, of course, other resources available to Constantinople and the army, upon which both drew. See below, Appendix B.

⁶ Procopius, *Anecdota*, xxvi, 19, ed. and trans. H. R. Dewing, VI (London, New York, 1914-1940), pp. 308 f. Hereafter, Procopius (ed. Loeb). See also Theophanes, *Chronographia*, ed. de Boor, I, 230.

⁷ See, in general, the study of Ph. Koukoules, 'Ονόματα καὶ εἶδη ἄρτων, 'Επετηρίς 'Εταιρ. Βυζ. Σπουδῶν, V (1928), pp. 30 ff., esp. 44 f. (Hereafter, Koukoules, "Kinds of Bread"), and his later republication of the same material in Βυζαντινῶν βίος καὶ πολιτισμός, V (Athens, 1948-52), pp. 47-62. (Hereafter, Koukoules, *Byzantine Life*), and for the economics of the "competition among grains" the excellent study of N. Jasny, *The Wheats of Classical Antiquity* (Baltimore, 1944), as well as

the bakers produced popular or "dirty" bread, carefully distinguished in the sources from the finer loaves consumed by the wealthier classes.⁸

With increased demand, the result of a phenomenal population growth, supply from Egypt became ever more essential in fourth-century Constantinople. Thanks to imperial pressure, the natural attraction exerted by a wealthy senatorial class, and the advantages of metropolitan living in the later Roman Empire, immigration had enlarged Constantinople by about the year 400 to a size of probably 500,000 souls within the walls.⁹ Shortly thereafter, however, the trend was reversed. During the fifth and early sixth centuries the virtually insoluble problems of administering and controlling the metropolis thus created forced the emperors to abandon their policy of fostering urbanization and to try instead to check the growth of their great city. Inasmuch as the population of a pre-industrial city increased significantly only when immigration from without compensated for a lower birthrate among the urban classes, it is probable that the late fifth and early sixth centuries were years of stagnation, or, at most, of much slower growth.¹⁰ A third period of absolute decline may be dated from 542, when the great bubonic plague or "pandemic" that struck Constantinople inaugurated what comparative materials and direct evidence alike lead us to suspect were generations, even centuries, of a surplus of deaths over births.¹¹ In one important respect, then, namely the diminution of demand, the later sixth century witnessed a significant alteration in the structure of the Mediterranean grain economy, a change that would render it easier for Constantinople to subsist from less abundant granaries once the loss of Egypt forced it so to do.

How the Empire managed to survive becomes even more comprehensible if we examine the changing character of military demand at the end of the sixth century, in particular, certain crucial developments concerning the size and location of the forces as well as the administration of the services of supply upon

his more popular "Competition among Grains in Classical Antiquity," *American Historical Review*, XLVII (1941-1942), pp. 747f. How important grain—either wheat or barley—was in the popular diet may be deduced from the account of the riots of 555 in Theophanes, ed. de Boor, I, 230. Millet was particularly favored by the Slavs, but held in contempt among the Byzantines: Maurice, *Strategikon*, XI, 5; IX, 1, 3, ed. J. Scheffer (Uppsala, 1664), pp. 273, 204f., 214f. The low estate of barley, in contrast to wheat, may be seen in Palladius, *Dialogus de vita S. Ioannis Chrysostomi*, trans. H. Moore (London, 1921), p. 142.

⁸ Koukoules, "Kinds of Bread," pp. 38-41. See, for comparison, *Vita Symeonis Stulti*, chaps. 49, 55, edited in Ioannes Bollandus, et al., *Acta Sanctorum* . . . , 3rd ed., January I (Brussels and Paris, 1863-); July I, 144, 147. (Hereafter, *Acta SS.*); also *Vita Porphyrii ep. Gazensis*, c. x, ed. and trans. H. Grégoire and M.-A. Kugener, *Marc le diacre: Vie de Porphyre, évêque de Gaza* (Paris, 1930), p. 10.

⁹ See Appendix A.

¹⁰ On immigration as essential to urban growth, see W. S. Thompson, *Population Problems* (New York, 1953), p. 75. On overpopulation, see L. Bréhier, *La civilisation byzantine* (Paris, 1950), pp. 81f.; *Les institutions de l'Empire byzantin* (Paris, 1949), p. 194f.

¹¹ Sources cited and discussed by E. Stein, *Histoire du Bas Empire*, II (Paris and Brussels, 1949), pp. 756-761. Particularly revealing are the statements of John of Ephesus, in W. J. Van Douwen and J. P. N. Land, *Commentarii de beatis orientalibus et historiae ecclesiasticae fragmenta* (Amsterdam, 1889), pp. 227-240, and of Evagrius, *Historia ecclesiastica*, IV, 29, ed. Migne, PG., 86, cols. 2752f. The latter stresses the repetitive and continuing nature of the plague. For the significance of this aspect, see Y. Renouard, "Conséquences et intérêt démographique de la Peste Noire de 1348," *Population*, III (1948), pp. 459-466; J. Saltmarsh, "Plague and Economic Decline in England in the Later Middle Ages," *Cambridge Historical Journal*, VII (1941), pp. 23-41; C. F. Mullett, *The Bubonic Plague and England* (Lexington, Ky., 1956), pp. 12-41.

which they depended.¹² It was with difficulty that Tiberius or Maurice found men for their armies.¹³ Even the scattered figures given in our sources suggest that the manpower shortage, so threatening to the success of imperial policies, stemmed not only from a more pressing need for soldiers, but from a quantitative decline in the expeditionary forces as well. In determining the impact of military demand for grain, the location of the troops would be of equal importance to their number. Thus it was fortunate for Byzantium, when the crisis came, that military demand was decentralized. While it yet contained some federates and their dependents, Constantinople had certainly ceased by the late sixth century to resemble, as it once had, a great armed camp grouped about a warrior emperor.¹⁴ Finally, from the very political weakness of a Tiberius or a Maurice the people of Byzantium were ultimately to derive a certain economic advantage. Unlike predecessors such as Julian, Anastasius, and Justinian, neither Emperor seems consistently to have exerted the authority necessary to ensure inter-provincial transport of grain, and to support frontier armies from distant centers of supply in the Mediterranean provinces. In East and West the field armies of the early seventh century drew upon the localities in which they found themselves and were not, therefore, seriously or directly threatened by the loss of Egyptian supply.¹⁵

¹² The age of Justinian may be taken as a starting point although Procopius' presentation of statistics should encourage skepticism: G. Downey, "The Persian Campaign in Syria in A.D. 540," *Speculum*, XXVIII (1953), pp. 340-348, esp. 343 ff. A number of converging indices suggest that the size of Justinian's armies generally ranged from 15,000 to 25,000 men, although smaller forces were frequent and larger hosts seem to have been collected only with effort. See, e.g., Procopius, *Bellum Persicum*, I, xiii, 23, xviii, 5 (ed. Loeb, I, 108, 160); *Idem*, *Bellum Vandalicum*, I, xi, 2 (ed. Loeb, II, 102); *Idem*, *Bellum Gothicum*, I, v, 2 (ed. Loeb, III, 42); Agathias, II, 4; III, 24 (ed. Dindorf, II, 185, 281). Cf. J. B. Bury, *History of the Later Roman Empire from the Death of Theodosius I to the Death of Justinian* (A.D. 395-565), II (London, 1923), p. 78 (hereafter, Bury, *Roman Empire 395-565*).

¹³ Note the implications of Menander, frg. 15, 19; *Excerpta historica iussu Constantini Porphyrogeniti confecta* I: *Excerpta de legationibus*, ed. de Boor, pt. 1 (Berlin, 1903), pp. 208, 217. In 583-584, Maurice's troops were estimated at 5,000 by John of Ephesus, *Historia ecclesiastica: pars tertia*, III, 13, ed. and trans. E. W. Brooks, *Corpus scriptorum orientalium*, ser. 3, t. III, versio (Louvain, 1936), p. 102; but contrast the calculations of P. Goubert, *Byzance avant l'Islam*, I (Paris, 1951), p. 45, who does not seem to give any valid reason for preferring the larger figures of Theophanes and Joannes Biclaensis to those of John. In 587, in Thrace, Comentiolus commanded a garrison of 10,000, of whom 6,000 were fit for active fighting: Theophylactus Simocatta, *Historiae*, II, 10, 9, ed. de Boor (Leipzig, 1887), p. 90. For additional sources, see below, note 24, and for general discussion, E. Stein, *Studien zur Geschichte des byzantinischen Reiches* (Stuttgart, 1919), pp. 118-121.

¹⁴ In general, R. Grosse, *Römische Militärgeschichte von Gallienus bis zum Beginn der ... Themenverfassung* (Berlin, 1920), pp. 60 ff. References to the quartering of troops in the city during the fourth and fifth centuries: *Codex Theodosianus*, ed. Th. Mommsen and P. Meyer (Berlin, 1905), VII, 8, 13; 1; 3; 5. (hereafter, C. Th.). Under Justinian, *scholarii* and *domestici* are found in various provinces of Asia Minor: *Edictum Iustiniani* (ed. Th. Mommsen, et al., in *Corpus Iuris Civilis: Institutiones, Digesta, Codex, Novellae* [Berlin, 1889-1928], VIII, 3, 3 (hereafter, C. J., Ed. J., Nov. J.). Also, Procopius, *Anecdota*, xxiv, 24 f. (ed. Loeb, VI, 289); Theophanes, ed. de Boor, I, 236. There were still barbarian federates or allies within the wall: Procopius, *Anecdota*, xxviii, 24 (ed. Loeb, VI, 277). In 578, the wives and children of Gothic federates remained in Constantinople while the fathers of the families went off to frontiers in Persarmenia and Africa: John of Ephesus, III, 13 (ed. Brooks, 102). Maurice, significantly, relieved the citizens from their burden of quartering troops: *Novellae Constitutiones Imperatorum post Iustinianum*, Coll. I, nov. 19, ed. K. E. Zachariä v. Lingenthal, *Jus Graeco-Romanum* III (Leipzig, 1856-1887), p. 32 (hereafter, Zachariä, *Jus Gr.-R.*). Possibly the increasing military significance of the popular parties is to be explained by a numerical decline of the professional military garrison: G. Manojlović, "Le peuple de Constantinople," *Byzantion*, XI (1936), pp. 631-634.

¹⁵ Support assured by ecclesiastical authorities: Evagrius, *Historia ecclesiastica*, VI, 11 (Migne, PG, 86 bis, col. 2860); Gregorius I, *Epist.* IX, 27; MGH, *Epist.* II, 60. In 602, Maurice ordered Peter to lead his forces into winter quarters in enemy lands across the Danube so that the granaries within

Indirectly, however, the loss of Egypt constituted a true crisis from the point of view of military demand. No longer able, after the seventh century, to draw upon the resources of that province, the emperors must have been seriously limited in their choice of an alternative source for the support and reward of their armies. With the province gone, it became all the more difficult to supply the *militia praesentalis* with the *annona* to which law and custom entitled it.¹⁶ If Constantinople were ever again to shelter a large armed force, its support would obviously have become a problem of the first order for the emperor. The maintenance at Constantinople of *foederati* and their families, such as those Tiberius had imported within the walls,¹⁷ would then have been difficult if not impossible. Finally, the emperor could not have promised, as easily as had Maurice, to nourish the veteran, once his term of service was past, in the city's homes for old men.¹⁸ We shall see in what ways Heraclius and his successors avoided these problems.

Patterns long-established are not easily shattered, and the habit of dependence on the subject province of Egypt was no exception to this rule. The decline and readjustment of civilian and military demand remained unmatched by any concomitant reorganization of the supply system, by any attempt to exploit to the full other producing areas and thus to end an often dangerous dependence upon one source of supply.¹⁹ While costs, political difficulties, and administrative weakness may have made Egyptian grain deliveries even more unpredictable under Maurice and Heraclius, the events of the seventh century had nonetheless a profound effect on the provisioning of Constantinople.²⁰ Inasmuch as these crises forced the Emperors to exploit more consistently and thoroughly resources to which, in the past, they had turned only occasionally and under duress, they brought into focus problems that more favorable circumstances had enabled the predecessors of Heraclius to avoid.

From another point of view, these same problems may be considered deficiencies in the supply system of the later Roman Empire. They had widened the gap between the quantity of demand and the amount produced and distributed to

the Roman province might be relieved of public distributions: Theophylactus Simocatta, VIII 6 (ed. de Boor, p. 295). This action may be compared with a passage from the *Strategikon* attributed to Maurice, wherein the author advises that the troops take the enemy harvest and emphasizes the abundance to be found in the lands of the Slavs: *Strategikon*, IX, 1 (ed. Scheffer, pp. 204f.); cf. *ibid.*, IX, 3, p. 214f. According to the same source, troops in winter quarters were ordinarily to be given leave to search for their food within the provinces: I, 7, p. 37. These practices contrast with arrangements during the fourth, fifth, and sixth centuries: see, e.g., Ammianus Marcellinus, *Res Gestae*, XVIII, 2, 3; C. Th. VII, 4, 13; 17; VIII, 1, 10; and Malalas, *Chronographia*, ed. Bonn, p. 467. For an interesting change at Rome during the Gothic Wars from water-borne supply to local subsistence, cf. Procopius, *Bellum Gothicum*, I, xiv, 17; II, xxiv, 14 (ed. Loeb, III, 148, IV, 80), with *ibid.*, III, xv, 9; III, xxxvi, 2 (ed. Loeb, IV, 278, V, 2).

¹⁶ If σιτηρέσιον may be taken in the narrower sense of grain distributions, we may have in 612 one of the last instances of a new grant of military bread. In that year, Heraclius enrolled soldiers drawn from the *bucellarii* of Priscus into the domestics and gave them τὸ ἐξ ἑθους σιτηρέσιον (Nicephorus, ed. de Boor, p. 6). Distributions of this type of bread ceased in 626: *Chron. Pasch.*, ed. Bonn, I, p. 715.

¹⁷ Above, note 14.

¹⁸ Theophanes, ed. de Boor, I, 274.

¹⁹ See below, Appendix B.

²⁰ Nicephorus, ed. de Boor, p. 12.

satisfy the demand. Among these problems, sheer physical risk assumed increased importance toward the end of the period under review. The attacks—actual and threatened—of Avars, Slavs, and other peoples upon the Mediterranean ports led frightened merchants to avoid, and even to abandon centers such as Rodosto or Thessalonica.²¹ To physical risk of this nature may be added the more abiding consideration of high transportation costs. Significant long-distance export of grain seems to have existed only insofar as public authority would direct it, forcing the taxpayer to assume its unwelcome burden. Thus at Edessa in 503, the soldiers whom Anastasius had collected for an offensive against Persia consumed bread furnished from Egypt. The civilian population, in striking contrast, was threatened with starvation.²²

Transportation costs were among the factors preventing smaller cities situated at some distance from the sea from drawing extensively upon Egyptian grain supplies. Only where size and the degree of specialization necessitated it, only where transportation facilities permitted it, did the local demand represented by the smaller cities seriously diminish the surplus available for Constantinople and the army. A great city such as Thessalonica, fulfilling because of its geographical location and its internal economy the conditions just mentioned, upon at least one occasion did compete with Constantinople for Mediterranean supply.²³ In contrast, the smaller centers probably affected Constantinople only insofar as their cumulative demand diminished the surplus which the surrounding province could export. The evidence is too fragmentary to permit us to trace a curve and assess fluctuations in local demand for local resources from the fourth to the sixth centuries. Certainly it did not diminish. It may even have increased as new cities were founded and the old were stimulated to new growth after the establishment of Constantinople. Whatever the direction of the curve, the lack of data necessary to delineate it may not be so serious as it seems. As long as Egyptian grain remained available, transportation costs and physical risk were equally crucial administrative problems.²⁴

The great plague of 542 introduced another problem to harass the officials administering Constantinople's grain supply. A serious decline in manpower left its mark alike in the chronicles, on imperial legislation, and on the military

²¹ As concerns Rodosto, see Procopius, *De Aedificiis*, IV, ix, 17–21 (ed. Loeb, VII, 296). For Thessalonica: *Miracula S. Demetrii*, sec. 65 (*Acta SS.*, Oct. IV, 127f.).

²² *Chronicle of Joshua the Stylite*, cc. lxx, lxxvii, ed. and trans. W. C. Wright (Cambridge, 1882), pp. 58, 62.

²³ *Miracula S. Demetrii*, secs. 69f. (*Acta SS.*, Oct. IV, 129–131). On the high cost of transportation, see C. Th. XI, 1, 22; Gregorius Nazianzenus, *Oratio XLIII*, cc. xxxv, xxxvi (Migne, *PG*, 36, cols. 544f.), and—above all—Ioannes Lydus, *De magistratibus populi romani*, III, 16, ed. Bonn (1837), pp. 255f.

²⁴ Economic and social aspects of the cities from the fourth to the seventh centuries are discussed by Kirsten, "Die byzantinische Stadt," pp. 10–17, and documentation for the growth of cities along the routes to Constantinople will be found in E. Gren, *Kleinasien und der Ostbalkan in der wirtschaftlichen Entwicklung der römischen Kaiserzeit* (Uppsala, 1941). The provisioning of the cities has been discussed by A. H. M. Jones, *The Greek City from Alexander to Justinian*, (Oxford, 1940), pp. 260f. His views on the relation of the city and the village should be compared, however, with those of P. Petit, *Libanius et la vie municipale à Antioche* (Inst. Franç. d'Arch. de Beyrouth: Bibliothèque Arch. et. Hist., t. lxii), (Paris, 1955), p. 307f., and should also perhaps be revised in the light of such sources as the capital description of the market at Amida in the sixth century, to be found in *The Syriac Chronicle of Zachariah of Mitylene*, VII, 5, trans. F. J. Hamilton and E. W. Brooks (London, 1899), p. 162.

policy of Tiberius and Maurice, forcing these two Emperors to value the winning of men more highly than the possession of land. Their policy was essential for both agricultural and military considerations. Given the conditions of soil and climate in Mediterranean lands, and the consequent need for the close and continuing union of man and land, any temporary or permanent shortage among the peasant population seriously threatened the successful completion of the "Farmer's Year" and the production of abundant harvests. Thus manpower shortage may be considered the final factor augmenting a discrepancy between demand and supply already created, on the one hand, by the needs of the consuming groups, on the other, by such determinants of production and distribution as high transportation costs, competition for grain among the larger cities, and physical risk.²⁵

To eliminate this discrepancy, to close the gap between what was needed and what the economy could produce, the emperors of the fourth, fifth, and sixth centuries applied to the system what remedies they could. The peasant was bound to the land, the shipmaster to his transport guild.²⁶ With an effort limited alike in its scope and in its success, the emperors in the east attempted to settle barbarian tribes upon waste or unproductive lands.²⁷ Masterless or abandoned land was assigned by them to those who would work it and pay the taxes due on it. Particularly in the third and last of these measures it has been possible to find an indication that the ratio of man to land within the productive economy remained at a perilously low level in view of the demands made upon it for taxes and foodstuffs.²⁸

²⁵ Evidence of a critical manpower shortage stemming from the plague of 541-544 may be found in Nov. Just., cxxii, pr.; Procopius, *Anecdota*, xxiii, 19-21 (ed. Loeb, VI, 274-276); for subsequent effects, see Evagrius, V, 19 (Migne, *PG*, 86, col. 2833); John of Ephesus, III, vi, 27 (ed. Brooks, 252). During the negotiations with the Persians in 580, the envoy of Tiberius II was quite willing to surrender Persarmenia to the enemy, while insisting that the inhabitants who had fled to Roman authority be kept within the boundaries of the Roman state: Menander, frg. 19 (ed. de Boor, p. 217). For other, albeit less telling references, *idem*, frg. 20, 31 (ed. de Boor, pp. 220, 475).

²⁶ For an unusually clear survey of the problem of the colonate in its juridical aspects, see Lemerle, "Histoire agraire," *Revue historique*, CCXIX, pp. 37, 45-48, who points out, "le souci d'approvisionnement ou celui du recrutement de l'armée. . . s'effaçent devant le souci du rendement de l'impôt." Small peasant proprietors who were free survived even into the seventh century; see the data from hagiography gathered by A. P. Rudakov, *Ocherki Vyzantiiskoi kul'tury po dannym grecheskoi agiografii* (Moscow, 1917), pp. 175f. The *navicularii* deserve a detailed study which would consider the issues raised by G. Mickwitz, *Die Kartellfunktionen der Zünfte und ihre Bedeutung bei der Entstehung des Zunftwesens* (Finska vetenskaps-societeten: Commentationes humanarum litterarum, VIII, 3), pp. 200ff. How the guild worked in the fourth century has been described by A. Piganiol, *L'Empire chrétien: 325-395* (Paris, 1947), p. 289f. For evidence of activity late in the sixth century, see John of Ephesus, III, i, 33 (ed. Brooks, pp. 30f.) possibly *Miracula S. Demetrii*, *loc. cit.*, note 23, above.

²⁷ Constantine provided for agricultural settlement of veterans in C. Th. VII, 20, 3 (320), but the law is not preserved in Justinian's code and Maurice had to promise support for veterans in the *gerocomia*: above, note 18. On the *limitanei*, see S. Mazzarino, *Aspetti sociali del quarto secolo*, (Rome, 1951), pp. 330-344. In believing that barbarian settlements were, on the whole, few, restrained, and unsuccessful, I have adopted the point of view of P. Lemerle, "Les invasions et migrations dans les Balkans," *Revue historique*, CCXI (1954), pp. 265-309, esp. 281. The problem deserves a fuller investigation.

²⁸ For a summary of recent work on the *epibole* or forced attribution of waste lands in the "proto-Byzantine" period, see Lemerle, "Histoire agraire," *RHist.*, CCXIX, pp. 37f. To the literature there noted, add the helpful and suggestive study of J. Danstrup, "The State and Landed Property in Byzantium," *Classica et Mediaevalia*, VIII (1947), pp. 222-262. See also below, pp. 138-139.

III. THE GRAIN ECONOMY OF THE BYZANTINE EMPIRE, 619-1025

The political events of the seventh, eighth, and ninth centuries were destined to make these problems even more critical. Well before the end of that period new centers of consumption within the world of Islam laid claim to the grain produced in Egypt, North Africa, and Sicily. The produce of Egypt in particular seems to have soon been lost to Byzantium for several reasons, of which political hostility is only one and perhaps not the most important. Production in the first centuries after 641 declined along the Nile.²⁹ The grain the land did produce had first to satisfy the needs of a warrior aristocracy situated in the garrison cities. New markets for the exportable surplus were found in the holy cities of the Hedjaz and in Nubia in exchange for slaves.³⁰

The destination of North African and Sicilian grain is a problem rather more difficult to solve. In neither area was warfare during the early stages of the conquest so destructive as to ruin agricultural productivity or to terminate shipping. North African and Sicilian ports remained in contact with Constantinople, while sporadically the emperors manifested in their western provinces an interest that led to more effective defense and tighter administrative control. Thus grain may well have been exported at different periods from Carthage, Catania, or Syracuse to Constantinople.³¹ At the same time, such shipments—if indeed they existed—were in all likelihood occasional, small in quantity, and organized under private auspices,³² for during the sieges of 674-678 and 717-718 Constantinople had to exist without dependence upon western supplies; indeed, throughout the earlier half of the eighth century shipments from Sicily

²⁹ See C. H. Becker, "Grundlinien der wirtschaftlichen Entwicklung Aegyptens im Mittelalter," *Islamstudien*, I (Leipzig, 1924-1932), pp. 201-217; M. de Boüard, "Sur l'évolution monétaire de l'Égypte médiévale," *L'Égypte contemporaine*, XXX (1939), pp. 427-459, esp. 436f.; D. C. Dennett, *Conversion and the Poll Tax in Early Islam* (Cambridge, Mass.), esp. pp. 110-115, who offers an explanation differing from Becker's for the *agri deserti* and the flight of the peasant; Lewis, *Naval Power and Trade*, pp. 83f., 87-97, who suggests that a true decline in prosperity was not visible until the eighth century; corrections to Lewis' use of the evidence on seventh-century Alexandria will be found in P. Kahle, "Zur Geschichte des mittelalterlichen Alexandria," *Der Islam*, XII (1922), pp. 29ff.

³⁰ Exports to the Hedjaz and Nubia: de Boüard, "Evolution monétaire," pp. 436ff.; G. F. Hourani, *Arab Seafaring* (Princeton, 1951), p. 60; G. Wiet, *L'Égypte musulmane de la conquête arabe jusqu'à la conquête ottomane* in *Précis de l'histoire de l'Égypte*, III (Cairo, 1932), p. 113; Kahle, "Alexandria," p. 31.

³¹ See below, Appendix C.

³² In the absence of indisputable evidence to the contrary, it seems a reasonable assumption that with the loss of Egypt there vanished the interlocking systems of forced transports through shipmasters' guilds and bureaucratic exploitation of a subject province for its grain. So P. Charanis, "On the Social Structure of the Later Roman Empire," *Byzantion*, XVII (1944-1945), p. 49. The outlay in money and men necessitated by these systems may have encouraged the impoverished Byzantine state to abandon such policies in the seventh century. For an estimate of costs in the administration of Egypt, see A. C. Johnson, *Egypt and the Roman Empire* (Ann Arbor, 1951), p. 153. But the obscure tax *nauticatio*, levied by Constans II in the West, needs more elucidation than it has received from, e.g., J. K. Danstrup, "Indirect Taxes at Byzantium," *Classica et Medievalia*, VIII (1946), p. 167. See Paulus Diaconus, *Historia Langobardorum*, V, 11, ed. G. Waitz, *MGH, Script. Rer. german.* (Hanover, 1878), p. 192, and the *Liber Pontificalis*, ed. L. Duchesne, I, p. 346. Throughout the Byzantine possessions in southern Italy—where often the government was in no position to organize regular deliveries of the *annona*—the grain seems to have been turned over to local needs; so J. Gay, *L'Italie méridionale et l'empire byzantin* (Paris, 1904), pp. 178-181, 209, 232f. For at least one case of *coemptio* used, oddly enough, for purposes of resale to the Arabs in Sicily: Cedrenus, *Compendium historiae*, ed. Bonn, II, 357.

must have been precarious at best.³³ Thus it is far from surprising that the loss neither of North Africa nor of Sicily had any discernible impact upon the grain economy of the Empire in the east. In the latter region the significant adjustments, whether of demand or of supply, had already been undertaken, and it is to them that we now turn.

1. *The Demand for Grain*

Bread, young Epiphanius is made to remark in the *Life of St. Andrew the Fool*, is something we eat each day.³⁴ So it was during the tenth century in a family of considerable means; and so it would have been in popular circles about the year 600. For upon the quality of demand, or what men chose to eat, the loss of the Mediterranean granaries had no appreciable effect. Bread, supplemented by fish and vegetables, remained the dietary staple, with flour from the wheat of the naked emmer family still preferred as the ingredient for the best of the several varieties. Such are the conclusions reached after reading the lives of the eighth- and ninth-century saints, but not until the twelfth century does Byzantine literature in the satirical poetry of Theodore Prodromus provide a tolerably complete account of popular diet.³⁵ Yet, since the information to be found therein coincides with both the materials from the sixth century and the fragmentary offerings of hagiography in the ninth, the poetry at least reinforces the conclusion that the Byzantine period saw no essential changes in what men chose to eat and drink at Constantinople.

Prodromus spoke mainly about food in his long poem addressed to the Emperor Alexius protesting the evil state of the writer and man of letters in Comnenian society: had he chosen a trade even so generally scorned as that of embroiderer, his cupboard might be full of salt fish, bread, wine, tunny, and other delicacies;³⁶ or, consider the fine estate of the shoemaker. A neighbor of his, Prodromus continues, who was a cobbler or pseudo-shoemaker lived each day on tripe, Vlach cheese, and delicious stews;³⁷ in fact, at one time he himself had tried to become a shoemaker, not in order to win the first quality of bread, but only "that of the middle" (τὸ μεσοκάθαρρον), but had wounded himself on the job and had had to spend time in the hospital.³⁸ The baker's man, of course, lives very well indeed, as do the vendors of sour milk and pepper mills together with the dyers of silk.³⁹ As for another neighbor, a sieve-maker,

³³ For the two sieges: Theophanes, ed. de Boor, I, 353 ff., 384 ff.; Nicephorus, ed. de Boor, pp. 32 f., 52 f. For analysis of these and the eastern sources as well, see M. Canard, "Les expéditions des arabes contre Constantinople," *Journal asiatique*, N.S., CCVII (1925-1926), pp. 40-102. Dennett, "Pirenne and Muhammad," p. 171, does not believe that all communication between Constantinople and the West was cut off from 674 to 678.

³⁴ *Vita Andreae Sali*, sec. 47 (*Acta SS.*, May VI, 27 f.).

³⁵ See, e.g., *ibid.*, sec. 23, pp. 14 f.; *Vita Stephani iunioris* in Migne, *PG*, 100, col. 1124; *Vita Basilii iunioris*, sec. 33 (*Acta SS.*, Mar. III, App. p. 27); Theodore Prodromus, "To the Emperor," ed. D. C. Heseling and H. Pernot, *Poèmes prodromiques en grec vulgaire* (Amsterdam, 1910), pp. 72-83.

³⁶ *Ibid.*, lines 25-28, p. 74.

³⁷ *Ibid.*, lines 45-63, pp. 75 f.

³⁸ *Ibid.*, lines 79-89, p. 76.

³⁹ *Ibid.*, lines 97 f., p. 77, lines 109-113, pp. 77 f.

he eats unbelievably well, for through the thin partitions of his dwelling Prodromus can smell his fish frying and his meat cooking.⁴⁰ But Prodromus himself ventures to ask only for bread.

Theodore found his protector, but the "Byzantine Villon" remained unsatisfied. In another poem, addressed to Andronicus Comnenus, he grudgingly thanked his benefactor for his gift of twelve *medimnoi* of wheat four times a year,⁴¹ complaining that it barely satisfied his household of thirteen for one month, and where, indeed, were the other things the well-appointed household needed: the clothing, the household goods, the many spices, the vegetables?⁴² For the purchase of these his own income was quite inadequate, and he entreated his patron for more assistance.⁴³ Finally, he recounts how his own wife had once all but reduced him to starvation, when, having been locked out by the shrew, he had gained admission to his house and board, which was burdened by a great steaming stew, only by disguising himself as a beggar and speaking in the tongue of the Bulgars.⁴⁴ Thus, except for instances rare enough to become material for the satirist's pen, the lower ranks of Byzantine society seem to have subsisted almost entirely on bread, fish, and vegetables, and, of these, bread seems to have been the fundamental element in the diet.

There is no reason to doubt either, that wheat maintained its superior position among the cereals. Millet, according to the eleventh-century medical encyclopedist Symeon Seth, should be eaten only when more satisfactory grains are not at hand.⁴⁵ Since medical writers all too often drew their observations from their more esteemed predecessors, Symeon's statement should not be accepted without the confirmation of actual popular attitudes, which, fortunately, can be found in the *Alexiad* of Anna Comnena. The armies of Bohemund, the princess reports, fell sick at Dyrrachium when they ate millet, a cereal she considered unsuitable.⁴⁶ Apparently oats remained the food for animals, while barley was still considered to be qualitatively inferior to wheat.⁴⁷ Thus the rebel Bardanes Turcus gave up wheat and ate barley when the collapse of his political ambitions forced him to adopt the habit of a monk.⁴⁸ Nikon the Metanoite, while still in his monastery near the boundary of Pontus and Paphlagonia, Athanasius the Athonite, and Luke of Hellas, all alike rejected ἄρτοι καθαροί and consumed barley bread to manifest their humility.⁴⁹

Barley remained the ingredient often found in the poorest type of "dirty bread" or ῥυπαρός,⁵⁰ and, inasmuch as barley prices during the Byzantine

⁴⁰ *Ibid.*, lines 130-144, pp. 78f.

⁴¹ Theodore Prodromus, "To the Sebastocrator," ed. Hesselings-Pernot, *Poèmes prodromiques*, II, lines 26-28, p. 41.

⁴² *Ibid.*, lines 29-61, pp. 41-45.

⁴³ *Ibid.*, lines 63-72, p. 45.

⁴⁴ Prodromus, "To the Emperor," *op. cit.*, I, lines 178-181, p. 34, lines 240-259, p. 36.

⁴⁵ Symeon Seth, *Syntagma*, ed. B. Langkavel (Leipzig, 1868), p. 137.

⁴⁶ Anna Comnena, *Alexiad*, XIII, 2, ed. and trans. B. Leib, III, pp. 93-95.

⁴⁷ Symeon Seth, *op. cit.*, p. 137.

⁴⁸ Theophanes Continuatus, *De Leone Armenio*, c. iii, ed. Bonn (1838), p. 10.

⁴⁹ *Vita Athanasii Athonitae*, ed. in *Analecta Bollandiana*, XXV (1906), p. 16; *Vita Lucae Helladis*, c. vi, ed. in *ibid.*, XIII (1894), p. 84. Cf. *Vita Nikonis*, ed. Sp. Lambros in *Νέος Ἑλληνομνημίων*, III (1906), p. 136.

⁵⁰ Koukoules, "Kinds of Bread," p. 43f.

period maintained the 2:3 ratio to wheat that is attested by late Roman evidence, probably neither the demand for, nor the supply of, this inferior grain changed in relation to wheat on the market at Constantinople.⁵¹ Within the provinces there may quite possibly have been important regional differences. For Greece, the classic land of barley production, the author of the life of Nikon the Metanoite reports an instance of barley bread consumption, in no way remarking upon it as anything out of the ordinary.⁵² On the other hand, even when the grip of poverty lay most heavily upon them, the family of Philaretos the Merciful continued to eat the wheat so abundantly produced in Paphlagonia.⁵³

Among the consumers, hulled spelt continued to find less favor than did the naked subspecies of wheat. Spelt, Symeon Seth had to remind his readers, is quite fit for bread, and, in fact, even more nourishing than barley,⁵⁴ while Nicetas Choniates seems to reflect a popular aversion to the subspecies of wheat.⁵⁵ In the writing of Symeon and in the twelfth-century satires of Theodore Prodromus, *semidalites* remained a better type of bread, still to be distinguished from the "dirty" variety.⁵⁶

Thus the diet of the inhabitants of Constantinople never ceased to be that of a Mediterranean people. For Comnenian society, this assertion can be made with considerable certainty, and there are no references to foods available in the Macedonian period that would contradict it. Rye and millet, so important in the western and northern centers of post-classical agricultural development, made no inroads upon what remained a Mediterranean cereal economy based upon wheat and barley. It was not in the quality of demand, but in its quantity and in the exploitation of new resources that the Byzantine Empire made its significant adjustment to the loss of its provincial granaries.

During the age of iron, ushered in by the reign of Heraclius, famine and plague, together with the curtailment of civic benefits, probably all but halved the population of Constantinople and its suburbs. Only if one turns for comparison to contemporary Rome or to descriptions of the eastern city itself on the eve of its final defeat in the fifteenth century, do the results of famine, plague, and other disasters seem in the seventh century less than absolute, and the history of the early medieval city not one of complete catastrophe.

Three outbreaks of plague have been recorded in the sources of the seventh and eighth centuries, but only one seems to have equalled in scope and intensity the initial disaster of 541-544. About the plague accompanying the loss of Egypt in 619, we have only the notice that it occurred.⁵⁷ Of the visitation of

⁵¹ G. Ostrogorsky, "Löhne und Preise in Byzanz," *Byzantinische Zeitschrift*, XXXII (1932), p. 320.

⁵² *Vita Nikonis*, ed. Lambros, p. 154.

⁵³ *Vita Philareti eleemosynarii*, ed. and trans. M. H. Fourmy and H. Leroy, "La vie de Philarète le miséricordieux," *Byzantion*, IX (1934), pp. 131, 133.

⁵⁴ Symeon Seth, *op. cit.*, p. 136.

⁵⁵ Nicetas Choniates, *Historia: De Andronico Comneno*, I, 9, ed. Bonn (1835), p. 396. Cf. Koukoules "Kinds of Bread," p. 44, note 7.

⁵⁶ Prodromus, "To the Emperor," *op. cit.*, IV, 96-108, pp. 77 f., and "Stichoi," ed. Hesselings-Pernot, III, 316, p. 62.

⁵⁷ Nicephorus, ed. de Boor, p. 12.

698, Nicephorus or his source chose to say simply that it lasted four months and was occasioned by the cleansing of the Neorion harbor.⁵⁸ Thanks to the literary activities of their children and grandchildren, much more is known about how the generation of the mid-eighth century suffered from the great plague of 746. Egypt and Syria, as in 541, were the first to suffer. The cities were harder hit than the country, and the peasant grew grain for his own mouth alone since there were none to buy it from him.⁵⁹ In one respect the disaster of 746 took on a new and significant form: its course ran not directly through Syria to Anatolia and thence towards Constantinople, but indirectly to Africa, Sicily, and the Peloponnesus. In 747 it reached the imperial city, giving Theophanes a chance to try his hand in imitation of Thucydides and Procopius. Apparitions shook men's minds as the houses of rich and poor alike were stilled. Revelry ceased, and the hands of the living proved inadequate to the task of burying the dead.⁶⁰

After making due allowance for literary embellishment to his lurid account, enough evidence remains to suggest that this was a pandemic of extraordinary virulence. Both maternal grandparents of Theodore the Studite fell victim to the buboes, leaving the education of their little daughter, Theoctiste, to the care of a charitable house.⁶¹ The actions of Constantine V seem to prove that such a tragedy was not unusual in the annals of other families, for the Emperor brought Greeks from the mainland and the islands into the unoccupied sections of the city.⁶²

While disease did its work within the walls, the enemy without fell upon the suburbs. In the early years of the seventh century the European side of the Bosphorus suffered from Avar raids, culminating in the great offensive by land and sea during the campaign season of 626. The Persians and Avars were succeeded by the Bulgars and the Arabs, and according to Nicephorus the latter harassed the Hebdomon daily from their fleet in the sea of Marmora during the great siege of 674–678. At the end of the century civil war combined with enemy action to bring about one of the darkest hours in the city's life. In view of the history of the preceding twenty years, marked as well by the depredations of Thracian brigands that remained unchecked until the reign of Constantine V, there is little reason to doubt the report of an Arab eyewitness on the conditions of the suburbs in 717:⁶³

⁵⁸ *Ibid.*, p. 40; cf. Theophanes, ed. de Boor, I, 370.

⁵⁹ Michael the Syrian, edited and translated by J. B. Chabot, *Le chronique de Michel le syrien*, II (Paris, 1899–1910), pp. 506f. His comment may be compared with the observations of William Hamilton on the effects of the plague of 1837 in Asia Minor. See L. S. Stavrianos, *The Balkans since 1453* (New York, 1958), pp. 134f.

⁶⁰ Theophanes, ed. de Boor, I, 423.

⁶¹ Theodorus Studites, *Oratio* XI, sec. 3, 4 (Migne, PG, 99, cols. 805–808).

⁶² Theophanes, ed. de Boor, I, 429; Nicephorus, ed. de Boor, p. 66. A clearer idea of the economic impact, and probably of the objectives as well, of this measure and the peasant settlements also undertaken by Constantine V may be gained by a comparison with the strikingly similar policies adopted by Mehmed II after 1453. See Critobulus, *De rebus gestis Mechemetis*, II, i, 1, xxiii, 1–3; III, xi, 1–7; ed. K. F. Müller *Fragmenta historicorum graecorum*, V (Paris, 1883), pp. 105, 118, 126f.

⁶³ From the *Khitab al Uyun*, ed. M. de Goeje, *Fragmenta historicorum arabicorum*, I (Leipzig, 1869), and trans. E. W. Brooks, "The Campaign of 716–718 from the Arabic Sources," *Journal of Hellenic Studies*, XIX (1899), p. 23. See below, note 182. The period as a whole is covered in G. Ostrogorsky, *History*

“And when Maslama had encamped at Kustantiniyya, he blockaded the inhabitants and attacked them with siege engines; and he collected the provender and corn, and they were conveyed to him from the outlying and exposed lands of the Romans; and they came to him in wagons, until that which was brought him became like mountains and those stores abounded in his camp; and he excluded the inhabitants of Kustantiniyya from all gainful occupation by land and sea. And the district of Marakiya [Thrace] was at that time laid waste, having been laid waste in that civil war; but at the present time it is well-peopled. And this was in their time one of the greatest weaknesses of al-Kustantiniyya....”

As Alexandria already had done early in the seventh century, and as Carthage was to do a few decades later, Constantinople might have made up its population deficit in city and suburbs from the refugees circulating in the Mediterranean during the seventh century. There were some in fact, particularly among the clergy, who sought refuge behind the Theodosian walls. In 681 the Council *in Trullo* expressed the hope that the wandering ecclesiastics lodged in the city might return to their proper stations once tranquility had been restored.⁶⁴ Possibly such refugees found conditions none too enticing in a city bereft of the important urban privileges it had once enjoyed, among which was the right to “political bread.”⁶⁵

In any case, their numbers failed to compensate for those whom plague and warfare had struck down. During the seventh and eighth centuries that part of Constantinople which was within the walls gave every evidence of a crucial shortage in manpower and of an increase of unoccupied land in parts of the urban precinct that had once been heavily populated. When a series of earthquakes levelled parts of the city walls in 732, Leo III issued an edict to the “people,” informing them that they were not competent to undertake the repairs. Instead, he ordered his tax collectors to add a surcharge of two *keratia* to the *canon*. This tax was paid by the Empire (ἡ βασιλεία), and it was the Empire that completed the reconstruction of the walls.⁶⁶ Unable to muster the necessary manpower from the ranks of the popular parties as had Theodosius II in the fifth century, Leo increased the taxes in order to hire workmen from outside the walls.

Even more indicative of a decline in the city’s population are the conditions under which Constantine V reconstructed the aqueduct of Valens in 766. Built late in the fourth century, the aqueduct was essential to the supply of baths and cisterns within the city. After it was destroyed during the Avar attack of 626,

of the *Byzantine State*, trans. J. Hussey (New Brunswick, N.J., 1958), pp. 79–162, and to the literature there cited may now be added F. Barišić, “Le siège de Constantinople par les Avars,” *Byzantion*, XXIV (1954), pp. 371–395. The Scamars or Thracian brigands are mentioned by Theophanes, ed. de Boor, I, 430.

⁶⁴ *Sacrorum conciliorum nova et amplissima collectio*, ed. J. D. Mansi, XI, col. 951.

⁶⁵ The termination of popular and military bread in *Chron. Pasch.*, ed. Bonn, I, pp. 711, 715. For the hypothesis of a general diminution of urban privileges, see G. I. Bratianu, *Privilèges et franchises municipales* (Paris, 1936), pp. 95 ff.

⁶⁶ Theophanes, ed. de Boor, I, 412.

the ruins outside the walls lay unused until a particularly severe summer's drought forced Constantine to undertake repairs. Gathering artisans from Asia, Pontus, Greece, the islands, and Thrace, he completed the work and brought water into Constantinople.⁶⁷ The episode is remarkably revealing. The city, often critically short of water in normal times, could, with a decreased population, survive the loss of an aqueduct for more than a century. Repairs, it should be noted, became necessary in something less than a generation after Constantine V had repopulated the urban precincts.

No less essential to the city's life than its aqueducts were its cisterns. Built, according to Procopius, to contain the winter's excess of water against the summer's shortages, and designed also to aerate the supply, "not a reign" went by in the earlier history of the city when cisterns did not have to be constructed to answer vital and continuing needs.⁶⁸ The seventh and the eighth, together with the thirteenth and the fourteenth, centuries seem to have been the exception to this rule.⁶⁹ Dramatically suggestive of conditions on the eve of the Empire's collapse, when the city had in effect dissolved into a series of separate villages, are the descriptions Nicephorus and Theophanes provide of cisterns dried up and unused at the time of the great plague. As the corpses piled up, exceeding the number of carts and animals available to carry them off, the living dumped the bodies of the dead into fields, vineyards, gardens, and unused cisterns.⁷⁰

More specific information is available concerning the cisterns of the imperial *proasteion* at Hieria and those of the Great Palace. According to an etiological tale, Heraclius' inordinate fear of death by drowning induced him to fill up the receptacles, converting them into vegetable gardens and parks, and the structure at Hieria remained in such condition until the ninth century. "...the famed Emperor Basil, seeing the region was endowed with sufficient places suitable for the construction of parks, but that it was scant in water that was potable and clean, straightway set many hands and much zeal to carrying out the earth, and changed the meadow, shortly before conspicuous in its verdure of growing things, back into its former state and made a receptacle of bounteous, flowing water in place of the park." As in the case of the aqueduct of Valens, the absence of the cisterns was apparently none too deeply felt until an expanding population made it imperative that they be reconstructed.⁷¹

Serious as the population decline became, it was never absolute. Even in the darkest of days, none of the city's harbors seems to have been decommissioned

⁶⁷ *Ibid.*, 440; Nicephorus, ed. de Boor, p. 75.

⁶⁸ Meyer, *Byzantion*, p. 5. K. C. Dalman, *Der Valensaquadukt* (Berlin, 1933); P. Forchheimer and J. Strzygowski, *Die byzantinischen Wasserbehälter Konstantinopels* (Vienna, 1893), p. 2. The importance of the cisterns is explained by Procopius, *De Aedificiis*, I, xi, 14f. (ed. Loeb, VII, 90-93). For the difficulties that might result when water supplies were low, see Procopius, *Anecdota*, xxvi, 23 (ed. Loeb, VI, 308), and Malalas, *Chronographia*, ed. Bonn, p. 492. In the tenth century water shortages were again a problem; see Liudprandus, *Relatio de legatione constantinopolitana*, c. i; ed. J. Becker, *Liudprandi opera*, (MGH: *in usum scholarum*), 3rd ed. (Hanover, 1915), p. 175.

⁶⁹ For comments on the city just prior to its collapse, see materials cited in note 79 below, and the references in Bréhier, *Civilisation byzantine*, pp. 79f.

⁷⁰ Theophanes, ed. de Boor, I, 423, 425; Nicephorus, ed. de Boor, p. 63.

⁷¹ Theophanes Cont., *Vita Basilii*, c. 92 (ed. Bonn, pp. 337f.).

permanently. Among the ports of the Golden Horn, the Neorion was dredged by Leontius.⁷² The sources occasionally mention even the installations on the southern shore, less favored by wind and tide; so the adherents of Phocas found it necessary to defend the harbors in both the third and twelfth regions against the attack of Heraclius.⁷³ A century later, the harbor of the twelfth region was reconditioned by Agallianus, turmarch of the Helladic theme under Leo III.⁷⁴

The chroniclers and hagiographers make it clear, too, that the ports were used for commercial, as well as military, purposes. A trade treaty with the Bulgars distinguished the otherwise obscure reign of Theodosius III.⁷⁵ Composed around the middle of the seventh century, the *Miracles of Artemius* tell of merchants from Chios, Amastris, and Constantinople—together with an African from Carthage and numerous unidentified *nautae*—who sought relief from disease and other afflictions at the shrine of the healer saint. Most significant of all, a merchant from Rhodes asked his family to permit him to remain in the city while he prayed for a miracle. On what seem to have been normal, periodic voyages, his sons twice returned to inquire whether he had yet been cured of his malady. The merchants mentioned in the *Miracles* usually owned their own ships, a detail suggestive of how slight was the need to specialize, how relatively anemic the volume of trade.⁷⁶

To judge from the actions of the government in time of siege, grain may well have bulked large among the objects of trade such merchants brought to Constantinople, for a state of siege usually implied danger from starvation in the seventh and eighth centuries. The Emperor Artemius, following the precepts of the *Strategicon* of Maurice and the *Tactica* of Leo, ordered all those who could not lay in a three years' supply of grain to leave the city before the Arabs attacked.⁷⁷ So, too, in 742 the siege undertaken by Constantine V forced Artavasdus to despatch boats beyond Abydus in a frantic search for supply.⁷⁸

In this very need to import grain lies an important clue to the numerical strength of Constantinople's inhabitants during the period in question. In the seventh and eighth centuries the population never sank to a level permitting it—as it did in the fourteenth and fifteenth centuries—to exist on its own resources. A description of the city in the year 1437 states that "...there can be living therein but barely, as I believe, forty thousand men. These can live from their own vines, fields, and other necessary things within, as is often proved." Since the population for the fifteenth century has been estimated to

⁷² Nicephorus, ed. de Boor, p. 40; Theophanes, ed. de Boor, I, 370.

⁷³ See, in general, R. Guiland, "Les ports de Byzance sur la Propontide," *Byzantion*, XXIII (1954), pp. 225f.

⁷⁴ T. Preger, *Scriptores originum constantinopolitanarum*, II (Leipzig, 1907), 257.

⁷⁵ Theophanes, ed. de Boor, I, 497.

⁷⁶ *Miracula Artemii*, ed. A. Papadopoulos-Kerameus, *Zapiski Istoriko-Filolog. Fakulteta Imp. St. Petersburgskago Universiteta*, fasc. 95 (St. Petersburg, 1909), pp. 3, 5, 9, 33, 39, 55-57.

⁷⁷ Theophanes, ed. de Boor, I, 384.

⁷⁸ *Ibid.*, I, 419.

have been, at most, 180,000 persons, it is probably safe to assume for the period under discussion a somewhat larger maximum figure of 250,000.⁷⁹

With the waning of the eighth century came a gradual demographic recovery at Constantinople. After 760, the city had many reasons to boast of an excess of births over deaths and of immigration over emigration. Most important among them, the plague of 746–747 seems to have foreshadowed the pest of seventeenth-century London in quickly passing and in leaving behind it for the next three centuries—so far as the sources indicate—no endemic infection as a heritage for succeeding generations.

Stimulating demographic growth was an agricultural surplus, ensured by resettlement and colonization during the eighth century, and fostered by almost two generations of relative order under the Isaurians. To the west of the city, within the Long Walls, grazed the cattle of emperor and patricians, whence they were brought to the market established by Constantine V on the Forum Tauri.⁸⁰ Arab visitors at the beginning of the ninth century testify to a flourishing agricultural life in the European suburbs and provinces nearest the imperial city.⁸¹ So, too, do the administrative measures of the Amorion emperors. Before 850, they had organized new themes about Dyrrachium and Thessalonica whence grain ships sailed, unless major civil disorder prevented it.⁸² During one such period of civil war, the revolt of Thomas the Slav, the surplus in the city's granaries was of sufficient quantity not only to assure its survival, but even to support refugees and seditious monks, brought within the walls that their hostility to the ruling dynasty might not make them ready adherents of the rebel. Quite in contrast to its conduct early in the eighth century, during a major siege Constantinople accepted, rather than expelled, men who were worthless from the military point of view.⁸³

If successful wars and the restoration of order provided the peasant a breathing space in which to cultivate and lay up his surplus, for the large proprietor and urban folk, too, they meant greater quantities of cheaper slaves on the market. Since it was the good fortune of the Empire to carry on many of its wars with peoples outside the Christian world, there was little moral

⁷⁹ Quotation from "Memorial on the Greek Lands and Churches," ed. S. Lambros, Νέος Ἑλληνομνημὼν, VII (1910), p. 361. Compare Ruy Gonzales de Clavijo, *Embassy to Tamerlane*, trans. G. Le Strange (London, 1928), pp. 87f., and Pero Tafur, *Travels and Adventures, 1435–1439*, trans. Malcolm Letts (London, 1926), pp. 146f. For a general discussion of the population of Constantinople in the last centuries of the Empire, see P. Charanis, "A Note on the Population and Cities of the Byzantine Empire in the Thirteenth Century," *The Joshua Starr Memorial Volume* (New York, 1953), pp. 135–149.

⁸⁰ Ibn al Fakih in E. W. Brooks, "Arabic Lists of the Byzantine Themes," *Journal of Hellenic Studies*, XXI (1901), pp. 72f. According to the patriographs, Constantine V moved the cattle market from the Golden Horn to the Forum Tauri. A. Van Millingen, *Byzantine Constantinople: The Walls of the City and Adjoining Historical Sites* (London, 1899), p. 226.

⁸¹ The Khitab al Uyun, trans. Brooks, "Campaign of 716–718," *op.cit.* p. 23. See also Harun ibn Yahya, trans. A. A. Vasiliev, "Harun ibn Yahya and his Description of Constantinople," *Annales de l'Institut Kondakov*, V (1932), p. 162. Cf. note 182 below.

⁸² On the foundation of these themes, Ostrogorsky, *Byzantine State*, pp. 172ff., which is based upon F. Dvornik, *Les légendes de Constantin et de Méthode vues de Byzance* (Prague, 1933), pp. 8f. For communications and travels within the region, see the latter author's *La vie de Saint Grégoire le Décapolite* (Paris, 1926), pp. 30, 54.

⁸³ For the flight of refugees, including monks, to Constantinople during the revolt: *Vita Theodori Studitae*, A, c. xxviii (Migne, PG, 99, col. 148); *Vita Theodori Studitae*, B, c. lxi (*ibid.*, cols. 317, 320).

objection to the enslavement of men whom generals captured in battle in the ninth and tenth centuries.⁸⁴ To swell their numbers, merchants brought rural slaves from the lands bordering on the Black Sea and others from Mediterranean regions to the south. While the greater number were doubtless destined to work estates possessed by such as the widow Danielis and the prototype of the master of Andrew the Fool, others served as house slaves in, among others, the bourgeois establishment of Theoctiste, mother of Theodore the Studite, and in the aristocratic houses that sheltered Andrew and Saint Basil the Younger.⁸⁵ The patriographs attributed the foundation of the slave market at the Staurion to the Emperor Theophilus,⁸⁶ and in his continual complaints against members of the monastic order who purchased slaves, Theodore the Studite suggests that the rule against ownership was more honored in the breach than in the observance.⁸⁷

The slaves to be found at Constantinople constituted a special class of immigrants; and it is far from surprising that a wealthy class, able to purchase them in such great numbers, attracted free men as well. Such visitors might find temporary food or lodging in the *xenodochia* or *hospitia* constructed by Irene and her successors,⁸⁸ or, should these be fully occupied, saintly men such as Basil the Younger might offer the wanderer a place at the table of a great house.⁸⁹ Shelter could always be found at least in the churches, along the arcades, or in the theater.⁹⁰ Two of those who migrated to the city left their mark on subsequent events: Thomas the Slav first appears in the records of the chroniclers when a search for the essentials of life brought him into the service of one of the leading citizens.⁹¹ An alliance with a member of the Martinakes family made it possible for Basil the Macedonian to migrate.⁹²

By the end of the ninth century, in consequence, the city administration found itself faced with many of the same problems of overpopulation that had confronted the eparchs of Justinian's age. The streets of Constantinople as described in the Life of Saint Andrew the Fool, were narrow, crowded, and filled with dung.⁹³ In one of his novels Leo the Wise revived the old provisions on the distance to be maintained between houses and even between house balconies. In another, a most significant law, he regulated the building plans of those who intended to build their houses on land hitherto assigned to the

⁸⁴ See A. Marava-Hadjinicolaou, *La vie des esclaves dans l'Empire byzantin*, Collection de l'Institut Français d'Athènes, XLV, (Athens, 1950), pp. 40f.

⁸⁵ Danielis and her hosts of slaves are mentioned in Theophanes Cont. (ed. Bonn., p. 228). See also *Vita Andreae Sali*, c. xi (*Acta SS.*, May VI, App., p. 5); *Vita S. Basilii Iunioris*, *Acta SS.*, Mar. III, 670; *Vita et officium Theophanis*, Migne, *PG*, 108, col. 49; Theodorus Studites, *Oratio XIII*, 5 (Migne, *PG*, 99, col. 888).

⁸⁶ *Patria Constantinopolis*, II, 64 (ed. Preger, II, 185).

⁸⁷ The rule of Theodore the Studite in his *Testamentum*, Migne, *PG*, 99, col. 1817.

⁸⁸ A full catalogue of the major foundations in R. Janin, *La géographie ecclésiastique de l'Empire byzantin*, pt. I, vol. 3: *Les églises et les monastères* (Paris, 1953), pp. 564-582.

⁸⁹ *Vita S. Basilii Iunioris*, *Acta SS.*, Mar. III, 670.

⁹⁰ *Vita Andreae Sali*, c. xvii (*Acta SS.*, May VI, App., p. 12).

⁹¹ Josephus Genesius, *Regna*, ed. Bonn (1834), p. 35.

⁹² *Ibid.*, p. 110.

⁹³ *Vita Andreae Sali*, c. lxix (*Acta SS.*, May VI, App., p. 35).

plow, the olive tree, or the vine.⁹⁴ Rents were high and Romanus Lecapenus became popular by cancelling debts owed the landlords.⁹⁵ During a particularly severe winter a paternalistic government had to cover the apertures in the arcades so that the poor who lived there would not die from the cold.⁹⁶ The compilers of the *Epanagoge* included among its provisions Justinian's novel ordering the quaestor to regulate visitors and put beggars to work.⁹⁷

With the greatest of energy the emperors strove to control and restrict both short-term visitors and hopeful permanent migrants. How effectively the fifth chapter of the *Epanagoge* could be enforced Liudprand of Cremona discovered as he waited, a supplicant for admission, outside the gate.⁹⁸ One of the objectives of the proposals for the commercial treaty of 907 with Russian merchants was the limitation and control of those who came to trade in the vicinity of the city.⁹⁹ The legitimate merchant received his ration but if "Russes come here without merchandise, they shall receive no provisions. . . . Such Russes as arrive here shall dwell in the Saint Mamas quarter. Our government will send officers to record their names, and they shall then receive their monthly allowance. . . ." Palestinian monks were directly told and brutally shown that the Emperor Theophilus did not welcome their presence.¹⁰⁰

The need to maintain peace and good order, together with a certain ingrained suspicion of the "stranger at the gate," usually accounted for the vigor with which emperors such as Theophilus enforced their laws. To watch and control the movements of peoples, Cecaumenus advised his son, was one of the basic principles of administration. Look out for the stranger to the province and scrutinize carefully the affairs of the city's corporations so that "whenever anything is afoot, you may know it."¹⁰¹ Politically motivated though they may have been, the measures the emperors took could hardly have failed to have a demographic effect, and in some instances the state seems to have acted frankly from the desire to prevent the creation of an impoverished urban proletariat, without bread, without homes, without even the hope for either. If Irene brought men to Constantinople, they took the place of those she had

⁹⁴ *Novellae Leonis*, lxxxi, cxiii, ed. P. Noailles and A. Dain, *Les nouvelles de Léon le sage* (Paris, 1944), pp. 256f., 372-374.

⁹⁵ Cedrenus, ed. Bonn, II, 318.

⁹⁶ Theophanes Cont., *De Romano Lecapeno*, c. xxvii (ed. Bonn, pp. 417f.).

⁹⁷ *Epanagoge* V, ed. J. and P. Zepos, *Jus Graeco-Romanum*, II (Athens, 1931), pp. 244-246.

⁹⁸ Liudprandus, *Relatio de legatione*, cc. i, ii (ed. Becker, *MGH*, pp. 175f.).

⁹⁹ *The Russian Primary Chronicle*, ed. S. H. Cross, *Harvard Studies in Classical Philology*, XII (Cambridge, Mass., 1930), pp. 150, 160-163.

¹⁰⁰ Leo Grammaticus, *Chronographia*, ed. Bonn (1842), p. 226; *Vita S. Theodori Grapti*, Migne, *PG*, 116, cols. 672-680. Both the first and second phases of Iconoclasm depopulated the monastic communities and the laity as well. When Theodore the Studite's uncle Plato turned to Constantinople after the persecutions of Constantine V, he is supposed to have found only twelve monks still at Studion although their numbers are alleged to have increased to seven hundred under Nicephorus. *Vita Theodori Studitae*, c. xxix (Migne, *PG*, 99, col. 145). The monastery of the Chora suffered a similar fate: *Vita Michaelis Syncelli*, *Izvestia Russkago Arkheologicheskago Instituta v Konstantinopole*, VII (1906), p. 251. When Irene came to the city after the death of Theophilus she is supposed to have found the monastic community in ruins: *Vita Sanctae Irenes*, cc. viii, x (*Acta SS.*, July VI, 604f.). For the laity: *Vita Stephani Iunioris*, Migne, *PG*, 100, col. 1088. Theophanes Cont., *De Theophilo*, c. x (ed. Bonn, p. 10).

¹⁰¹ Cecaumenus, *Strategicon*, c. x, ed. V. G. Vasilievsky and V. Jernstedt, *Zapiski Istoriko-Filolog. Fakulteta Imp. St. Petersburgskago Universiteta*, fasc. 38 (St. Petersburg, 1896), p. 5.

forced to leave.¹⁰² Refugees from the Bulgars in 826 were dispatched by Theophilus to their proper homes in the provinces once they had reached the haven of Constantinople.¹⁰³ When, as did the Phrygians of the fourth century, starving peasants from Paphlagonia left their villages during a famine, they were—unlike their predecessors—sent back home where the Bishop of Ancyra ministered to their needs.¹⁰⁴ Whether the emperors were able to maintain the population at a level sensibly below that of the early sixth century, we cannot tell. They were successful at least to the degree that large tracts of land, suitable for agricultural purposes, remained uninhabited within the walls.¹⁰⁵ A consideration of military need will demonstrate why their policies became ever more vital to the grain economy in the course of the tenth century.

Until then mediation between urban and military demand, while sometimes necessary, did not become a problem of crucial and continuing importance. In the first place, the small size of the Byzantine armies precluded much competition between the two consuming groups. To begin with the period immediately subsequent to 619, there is no reason to believe that the armies Heraclius and his immediate successors commanded were any larger than the contingents Maurice had led. Rejecting fantastically large estimates of 100,000 and 120,000 to be found in Sebeos, Nicephorus, and Theophanes, it is possible to accept for the expeditionary forces such figures as the 8,000 fighting under Heraclius at Antioch in 614 or the 3,000 men with whom Valentinus besieged Constantinople in 642.¹⁰⁶ In 715 or 716, when both urban and rural population were probably at their lowest ebb, the future Leo III at the head of 300 men conferred with the Arabs at Amorium; later he retired to Pisidia while entrusting the defense of the beleaguered city to a complement of 800 men.¹⁰⁷ The armies Constantine V collected for his Bulgarian wars bespeak a healthy increase among the ranks of the themes, but it is impossible to do more than merely estimate a maximum figure, and that for the cavalry alone. Towards the north in 763, Constantine led an army on foot through Thrace, while 800 ships carried twelve horses each to the mouth of the Danube.¹⁰⁸ Assuming a man to each horse, the sum in question would indicate a maximum cavalry force of 9,600. The number was almost certainly smaller, inasmuch as Byzantine armies maintained extra horses for remount.¹⁰⁹ The reign of Nicephorus I ushers

¹⁰² Theophanes, ed. de Boor, I, 462.

¹⁰³ Leo Grammaticus, ed. Bonn, pp. 231–233, cf. p. 215. For discussion, J. B. Bury, *A History of the Eastern Roman Empire from the Fall of Irene to the Accession of Basil I* (London, 1912), pp. 370f.

¹⁰⁴ Cedrenus, ed. Bonn, II, 499. The Phrygians: Socrates, *Historia ecclesiastica*, IV, 16 (Migne, PG, 67, col. 501).

¹⁰⁵ Theophanes Cont., *De Romano Lecapeno*, c. xlv (ed. Bonn, p. 431).

¹⁰⁶ The command of large armies is ascribed to Heraclius and Justinian II by e.g., Sebeos, *Histoire d'Heraclius*, trans. Macler, p. 81; Theophanes, ed. de Boor, I, 377; Nicephorus, ed. de Boor, p. 43. The figure given in the last two sources seems particularly questionable since in the same year the Emperor had to increase his regulars with an *ad hoc* peasant militia. Theophanes, *loc. cit.*, Nicephorus, p. 43. But for the suggestion of a different interpretation of this passage, see Lemerle, *op. cit.*, CCXIX, p. 72, whose skepticism I share. Contrast the figure given by Sebeos, p. 67, for Heraclius' army at Antioch and for Valentinus, Nicephorus, p. 30.

¹⁰⁷ Theophanes, ed. de Boor, I, 387f.

¹⁰⁸ *Ibid.*, I, 432.

¹⁰⁹ When winter set in at Kanzaka, 628, Heraclius ordered his cavalymen to quarter the greater part of their complement of horses in the houses of the town, each man keeping with him but one mount in the camp. *Chron. Pasch.*, ed. Bonn, pp. 727–734.

in a period for which figures are at once more reliable and more frequently found. Kodama thought that the Byzantine army of the ninth century included 120,000 men; if infantry, thematic, and tagmatic troops are included, the estimate should not be summarily rejected.¹¹⁰

Kodama's figures indicate that the total armed force fell short of Justinian's military reserves by 30,000 men at the time Agathias wrote, while the ideal tactical force seems to have been smaller than those Belisarius commanded.¹¹¹ From the *Strategicon* of Maurice, Leo VI adopted into his *Tactica* the basic principle that wars were best carried on by small, well-disciplined units. He contemplated a themal army of 4,000 to 5,000 men, a figure that is repeated in the works on military practice.¹¹² The anonymous author of the *De velitatione bellica*, describing the warfare on the Taurus frontier conducted by successive members of the Phocas family, felt that a great deal had been accomplished there by only a few troops.¹¹³ Even to repel a massed hostile force, a good general needed only 5,000 horse in addition to the help of God.¹¹⁴ If a general collected all the themes of the East to combat the enemy in full force, he might, Leo believed, muster an army of 30,000 men.¹¹⁵ Even in the ninth and early tenth centuries, then, normal warfare seems to have been conducted on a rather small scale. It seems unlikely that a *strategos* ever found himself, save in the most extreme of emergencies, at the head of a force greater than 5,000 horse associated with an indeterminate infantry complement. Leo VI believed that the armies of the Byzantine state were smaller in size than armies once had been, and other writers seem to prove his contention. The ideal total force of 16,000 envisaged for an expedition in the tenth-century treatise *De castrametatione* is smaller than the 25,000 Procopius states Belisarius commanded in 532.¹¹⁶ The active fighting force on the expedition to Crete in 911—8,000—is smaller than the active fighting force of 15,000 Procopius believed to have participated in the Vandal expedition.¹¹⁷ The 16,527 men enumerated for the second Cretan expedition of 949 includes both oarsmen and the disembarkation force, and it inaugurates an age of large-scale warfare when an eye-witness such as Leo the Deacon did not hesitate to speak of armies numbering 40,000 men.¹¹⁸

In the tenth century, when the civilian population once more abounded, the emperors maintained, even furthered, that decentralization of forces already a

¹¹⁰ So Bury, *Eastern Roman Empire*, p. 226, note 1, on the basis of the figures to be found in Kodama, *Khitab al Kharadj*, ed. and trans. M. de Goeje, *Bibliotheca geographorum arabicorum*, VI (Leiden, 1889), pp. 197–199.

¹¹¹ See above, note 12.

¹¹² Leo, *Tactica*, constitutio iv, sec. 62; xiii, sec. 32 (Migne, *PG*, 107, cols. 713, 816).

¹¹³ See the summary and discussion of this type of warfare by G. Schlumberger, *Un empereur byzantin au dixième siècle: Nicéphore Phocas*, 2nd ed. (Paris, 1923), pp. 142f., 286–291.

¹¹⁴ Anonymous, *De velitatione bellica*, c. xvii, ed. Bonn (1828), p. 17.

¹¹⁵ Leo, *Tactica*, const. xviii, secs. 142–153 (Migne, *PG*, 107, cols. 981–989); cited and discussed by F. Lot, *L'art militaire et les armées au moyen âge*, I (Paris, 1946), pp. 27–74, esp. 67f.

¹¹⁶ Leo, *Tactica*, const. xx, sec. 72 (Migne, *PG*, 107, col. 1013); Scriptor Incertus, *Liber de re militari*, cc. i, viii, ed. R. Vári (Leipzig, 1901), pp. 1, 17. For the date and background of this pamphlet, see the review of Vári's edition by J. Kulakovskii, *BZ*, XI (1902), pp. 547–558, itself an important contribution.

¹¹⁷ Constantinus Porphyrogenitus, *De cerimoniis*, II, 44, ed. Bonn, I, (1829), 654.

¹¹⁸ Constantinus Porphyrogenitus, *De cerimoniis*, II, 45 (ed. Bonn, I, 664–667). Leo Diaconus, *Historiae*, IV, 2; VIII, 4; VI, 12 (ed. Bonn, pp. 56, 132, 109). On the changing character of warfare and the larger scale of the expeditions, see note 142, below.

feature of the military establishment late in the sixth century.¹¹⁹ Of the four tagmatic divisions attached to the emperor's person, the most important had diminished in numbers while, on the contrary, its military effectiveness increased. In contrast to Justinian's eleven *scholae* of 500 mediocre warriors each, tenth-century sources mention thirty elite *banda* of fifty each, a reduction at least in theory from 5,000 to 1,500 men. The *excubitores*, it is true, had increased to 700 men, but the augmentation of 200 failed to offset the decrease in the more important scholarian division. The *Ikanatoi* numbered 476 in 949, but for the fourth division, the *arithmos*, no numbers are to be found. The function of this *tagma*, that of guard for the imperial palace and tent, suggests that its ranks were none too large.¹²⁰

As did their predecessors in the later Roman Empire, the palatine forces of the Byzantine period were often garrisoned not in the city itself, but in dispersion throughout the provinces. Thus, detachments of the scholarians, according to the *De cerimoniis*, were to be found in Thrace and Macedonia, while the domestics of the *scholae* joined the Emperor on expedition at the great camp near Malagina on the Sangarius river.¹²¹ In one respect decentralization had been carried even further some time after the accession of Heraclius. No longer were large numbers of *foederati* accommodated, as had been the Goths of Tiberius and Maurice, with their families in Constantinople itself. During the long, slow process of the elaboration of the themes and the military settlements, they were given homes in Lycaonia and Pisidia whence some of them were drawn back—whether occasionally or regularly we do not know—to perform garrison duty in Constantinople. In similar fashion, although not in settlements on the land, the *Hetaireia* or guard of foreign mercenaries so important in the sources of the tenth and eleventh centuries, were sometimes to be found scattered through Bithynia, sometimes in winter quarters in the Thracesian theme.¹²² Thus it is not surprising that, at the time of the Tornicius revolt, Constantine IX (1042–1055) could defend himself, against troops from the western themes, with little more than the city walls.¹²³ When Isaac Comnenus (1057–1059) acceded “with all due legal sanction” to the throne of Michael VI, one of his first acts was to dispatch his army from the city to their homes in the country.¹²⁴

As he watched the men depart, Psellus breathed a sigh of relief, and with reason, for, although the higher ranks sometimes forgot it, often to their own regret, the proper abode in time of peace for the Byzantine themal soldier and his officer was at home in the country. One cannot be, observed Cecaumenus,

¹¹⁹ See above, p. 93, note 14.

¹²⁰ For the *Ikanatoi*, *De cerimoniis*, II, 45 (ed. Bonn, I, 666); on the other units, Bréhier, *Institutions de l'Empire byzantin*, pp. 353–355; J. B. Bury, *The Imperial Administrative System in the Ninth Century*, British Academy, Supplemental Papers, I (London, 1911), pp. 53f. But Bury wondered if he had not overestimated the reduction: *Eastern Roman Empire*, p. 228.

¹²¹ *De cerimoniis*, I, App. (ed. Bonn, I, 445). I follow here the emendations suggested by H. Gelzer, *Die Genesis der byzantinischen Themenverfassung*, Abhandlungen d. königl. sächs. Gesellschaft d. Wissenschaften XVIII, 5, (Leipzig, 1899), pp. 108–114.

¹²² On the *foederati*, see the arguments of Stein, *Studien*, p. 140. The *Hetaireia*: Cedrenus, ed. Bonn, II, 508f., 606, 617.

¹²³ Michael Psellus, *Chronographia*, VI, 105, ed. and trans. E. Renauld, II, (Paris, 1928), pp. 18f.

¹²⁴ *Ibid.*, VIII, 45 (ed. Renauld II, p. 111).

both a man of the city (πολιτικός) and a general.¹²⁵ If the Byzantine army was small, if it was decentralized, it was also predominantly a rural force; though it may not have been, it is true, a peasant militia composed of those who fought part-time and farmed part-time. In clarifying the distinction between the στρατιώτης (he who holds land obligated to support military service) and the στρατευόμενος (he who physically performs the service), a recent study has suggested that the στρατιωτικὰ κτήματα may not necessarily have been lands held and worked by the very men who fought to defend them. At the same time "the condition of the soldier and that of the peasant are very close"; the soldier was a familiar figure on the rural scene.¹²⁶ The chronicles and tactical treatises of the tenth century suggest that the soldiers' quarters, either during the intervals between campaigns or upon retirement after the term of service, were usually in the villages. What tenth-century materials clearly reveal is more dimly reflected, as we shall see, in the sources of an earlier period. The implications for the supply system are obvious. In time of peace, military demand was dispersed, thereby lessening the burden on any one locality. An emperor no longer had to promise accommodations for veterans in urban homes for old men or to require a provincial garrison to take up winter quarters in the lands of the enemy.¹²⁷

When rumors reached him of the death of Romanus II, Nicephorus Phocas found his plans checked and his position weakened by the absence of his troops, who were at home whither he had sent them.¹²⁸ When the same Emperor returned from his expedition of 964, he despatched his Cappadocians to their villages, warning them to maintain their horses and equipment against the call to arms in the spring, and keeping by him only a small élite group to take part in military exercises.¹²⁹

If the emperor wished to undertake an expedition or defend a province against Arab or Bulgar, probably this same élite group (or "cadre") was responsible for establishing camps and searching out those whose names were listed in the military catalogue. It was then, reported the anonymous author of the treatise *De castrametatione*, that a check was made on the condition of horses, equipment, and estates.¹³⁰

"Before invading enemy lands, trustworthy men of the emperor's own should muster up the entire army, that they may know how many are present to bear arms for his sacred empire; how many establishments, in contrast, have fallen to ruin and how many men have fled; in addition, how

¹²⁵ Cecaumenus, *Strategicon*, c. xxxviii, ed. Vasilievsky and Jernstedt, p. 20.

¹²⁶ Lemerle, "Histoire agraire," *RHist.*, CCXX, p. 59, and, in general, 43-70; cf. *ibid.*, CCXIX, pp. 70-73, where Lemerle, commenting on a passage from the *Vita Philareti* (see below, note 131), believes that it shows a garrison "installée dans un district rural," where "les soldats sont peut-être étroitement mêlés à la vie des paysans."

¹²⁷ Theophanes, ed. de Boor, I, 415.

¹²⁸ Leo Diaconus, *Historiae*, II, 11 (ed. Bonn, p. 31).

¹²⁹ *Ibid.*, III, 11 (ed. Bonn, p. 53).

¹³⁰ Scriptor Incertus, *Liber de re militari*, c. xxix (ed. Vári, pp. 49f.).

many have let themselves slip through inertia and how many men have died; further, which ones have kept their equipment and horses in good order. Nothing ought to be overlooked; it should be discovered which are fulfilling their obligations and which through sluggishness, have preferred their own affairs before matters that touch the general interest."

The *adnumion*, or muster system, was enforced with all the rigidity the author advised, and it was older by far than his treatise of the tenth century. In the ninth-century Lives of Saint Philaretus the Merciful and Saint Eustratius Augarus, frantic soldiers, fearful of the punishment in store for them, received from the saints horses to replace their own mounts.¹³¹

Armed, then, by his own efforts or with the assistance of a kindly saint, the soldier left his home to join the other members of the theme in preparation for the campaign. It was obviously at this point, with men heavily concentrated in certain localities, that military demand might threaten most seriously the normal pattern of the wheat economy. Thus Leo VI urged that once the muster had taken place, once the camp had been formed and the condition of men and horses investigated, then this great body should split up and carry on its exercises in more manageable groups.¹³² Such a concentration of men, Leo stated, could be politically dangerous, and there is reason to believe that he was well aware of the chaos it could bring to the equilibrium of supply and demand. Repeating the provisions of the *Strategicon* of Maurice, Leo advised his general to avoid urban agglomerations and to treat the peasant's fields gently. He even added a suggestion of his own, urging that the expeditionary army be led as quickly as possible beyond the frontier that it might live on foreign rather than on domestic agriculture.¹³³

Now that they could no longer draw upon Egypt in emergencies, the emperors strove—with a decentralized, dispersed, and rurally based army—to avoid incidents similar to the famines suffered at Antioch under Julian or at Edessa under Anastasius. Yet it was impossible completely to avoid such emergencies. While the predominant pattern of warfare in the ninth and early tenth centuries (when population, and hence urban demand, was in the ascendancy) may have been one of limited action to which relatively few troops were committed, these years were by no means unmarked by larger enterprises both offensive and defensive in character. Even if unsuccessful, the expeditions mounted under Leo VI represented a large expenditure of military effort. Frequently it was necessary to displace and concentrate the themal armies on only one of the many frontiers. Armies from Asia Minor accompanied Constantine V and Nicephorus I against the Bulgars to the north.¹³⁴ A passage from the life of Michael III in *Theophanes continuatus* suggests that the opposite was often true on those occa-

¹³¹ *Vita S. Philareti*, ed. Fourmy and Leroy, p. 127; *Vita Eustratii, hegumeni Augari*, c. xiii, ed. A. Papadopoulos-Kerameus, 'Ανάλεκτα ἱεροσολυμιτικῆς σταχυολογίας, IV, (St. Petersburg, 1891-1898), p. 377.

¹³² Leo, *Tactica*, const. ix, sec. 4 (Migne, *PG*, 107, col. 768).

¹³³ *Ibid.*, const. ix, secs. 15, 23 (Migne, *loc. cit.*, cols. 772f.).

¹³⁴ See above, note 126, and for Nicephorus: Theophanes, ed. de Boor, I, 489f.

sions during the ninth century when the caliphate organized an offensive to penetrate deeply into the Empire's heartland.¹³⁵

Upon such occasions, when the themal armies could be as much armies of movement as the *exercitus comitatensis* of the later Roman Empire, the emperor provided *annona* for his troops. It was only because of special arrangements, clearly distinguishing him from the majority of his comrades, that Luke the Stylite supplied himself from his "paternal house."¹³⁶ A statement by Ibn Khordadbeh, which gives a contrasting picture, probably refers to the *akritae*, or frontier warriors, alone: "There is," he remarks, "no market in the Roman camp. Each soldier is obliged to bring from his home (*manzil*) the bread, oil, wine, and cheese that he needs." Fighting, in a more literal sense than did the themal soldiers, to defend their own land, carrying provisions for fifteen days, and rotated from their posts at the end of that time, the *akritae* may well have been the contingents Ibn Khordadbeh had in mind.¹³⁷

For the bulk of the army the logistic problem was quite different, and responsibility for assuring supply had, obviously, to lie with the emperor's agents. How they carried out their duties during the wars on the northern frontiers it is impossible to tell, nor do we know in general how the armies of the seventh and early eighth centuries supported themselves when on campaign within the boundaries of the Empire. In all likelihood they followed a system of *ad hoc* requisitions much like that upon which the armies of Maurice had depended. In 813 the troops of Michael Rangabe, for example, are supposed to have caused more damage in Thrace than had the Bulgars, and it may have been only the reduced number of the contingents that prevented the scope and burden of their demands from becoming even greater.¹³⁸

Generalization is possible for the wars in Asia Minor alone, and then only when the frontier had stabilized itself in the latter half of the eighth century. It is, in fact, probable that stability was necessary before new principles could be elaborated and each functionary in the chain of command assigned a definite role in the support of the mobile field units. The document from which we must draw the greater part of our information on the services of supply for the expedition—the ceremonial observed when the emperor left on campaign—attributes the first elaboration of organization to the Isaurians.¹³⁹

To judge from Constantine VII's description, the imperial bureaucracy attempted to distribute the burden of demand as widely as possible. As the emperor passed through the great camps or assembly points on the way to the

¹³⁵ "...for when the Bulgars are at peace, it was the rule that they [soldiers from Thrace and Macedonia] go on campaign and share dangers with the Anatolics." *Vita Michaelis*, c. xxv (ed. Bonn, p. 181).

¹³⁶ *Vita Lucae Stylitae*, c. vi, ed. H. Delehaye, *Les saints stylites* (Brussels, 1923), p. 201.

¹³⁷ Ibn Khordadbeh, *Khitab al masalik*, ed. M. de Goeje, *BGA*, VI, 85; English translation by Dr. Irfan Kavar. For the conditions of service, see sources and discussion, note 113, above. On this, and the preceding passage from the *Vita Lucae Stylitae*, cf. Lemerle, *op. cit.*, CCXX, pp. 64 f.

¹³⁸ Theophanes, ed. de Boor, I, 500. Under Heraclius, the troops seem to have depended largely upon the supply they could find along the route of march. This factor was an important consideration in the choice of strategic alternatives: Theophanes, ed. de Boor, I, 312.

¹³⁹ *De cerimoniis*, I, App. (ed. Bonn, I, 457 f.).

Syrian or eastern frontiers, he was met by successive themal armies, and as the imperial host approached a particular camp, it was the duty of the protonotary of the respective theme to furnish the emperor with whatever the latter might need. Thus if the system worked well, the burden would fall upon each of the successive themes as a whole, avoiding excessive demands on the resources of any one region through which the troops passed.¹⁴⁰ For the sea-borne expeditions to Crete, the Thracasian and Anatolic themes provided bread as well as men when the ships set sail from Attalia.¹⁴¹

Despite the best of planning and organization, the great expeditions undertaken by land and sea late in the tenth century were a grievous burden on the supply system. It may be noted that *chronic* short supply and high prices at Constantinople are first noticed in the chronicles at the point when large expeditions mounted to capture and hold enemy cities and lands became the rule rather than the exception.¹⁴² In July 960, when he launched the third and most successful attack on Crete, Nicephorus Phocas brought his troops into a land already suffering from a bad harvest. For many months the siege was slow and indecisive; on the urgent appeals of his general, the Emperor Romanus II sent further supply to his invasion army in the winter of 960–961. In October, 960, Constantinople began to suffer from a famine so severe that Joseph Bringas had to bring speculators to heel and search for supplies in “East and West.”¹⁴³ This famine of 960—the first the sources record since the bad winter of 927–928, and the second or possibly the third since the siege of 742—may of course have had causes other than the initial shipment to Crete in July. It was apparently a bad

¹⁴⁰ *Ibid.*, I, App. (ed. Bonn, I, 451 f., 477, 489).

¹⁴¹ *Ibid.*, II, 44 (ed. Bonn, I, 658 f.).

¹⁴² On the character of warfare in the tenth century: Bury, *Eastern Roman Empire*, p. 249; S. Runciman, *The Emperor Romanus Lecapenus and His Reign* (Cambridge, 1929), pp. 120–150, esp. 146 f.; Ostrogorsky, *Byzantine State* pp. 256–258. A good idea of the conflict, from the Arab side, along the frontiers in Asia Minor may be gained from the sources translated by E. W. Brooks, “Byzantines and Arabs in the Time of the Early Abbasids,” *English Historical Review*, XV (1900), pp. 728–747.

Leaving aside those caused by siege, the famines or shortages I have been able to discover in the sources are the following: (1) a tradition of high prices under Basil I, cited in connection with the speculations of Nicephorus II: Cedrenus, ed. Bonn, II, 372 f.; (2) the great famine of 927, caused by an unusually severe winter: Theophanes Cont., *De Romano Lecapeno*, c. xxvii (ed. Bonn, p. 417); (3) under Romanus II in October, 960: Ps.-Symeon Magister, *Chronicon*, ed. Bonn (1838), p. 759; no cause given. (4) the famine of the summer of 968—sources discussed below—allegedly caused by the winds in May; (5) in the reign of John Tzimiscus (970), Cedrenus, ed. Bonn, II, 381, mentions a shortage that had continued five years; no specific cause assigned. (6) famine of 1037 at Constantinople, caused by a six months' dry spell: Cedrenus, ed. Bonn, 516. One has only to leaf through the lives of the saints to realize that local famines in the countryside were almost annual occurrences, but general shortages affecting Constantinople itself were rare indeed. For two reasons it seems probable that even were the sources complete, the list would not be significantly extended. (a) The famine of 927/928 remained a landmark, even in imperial legislation. See the novel of Nicephorus II, dated 967, in *Imperatorum post Iustinianum novellae constitutiones*, Coll. III, nov. xx, ed. Zachariä, *Jus. Gr.-R.*, III, pp. 296–299; cf. Ostrogorsky, *Byzantine State*, pp. 242 f., 253. (b) The Isaurians and Amorians were notoriously out of favor with their historians. Since famine could be—and frequently was—laid at the emperor's door, would not ecclesiastical chroniclers have been quick to seize upon any such evidence in their sources and attribute it to the Iconoclast in power? Even Theophanes had to admit that prices were low under Constantine V, attributing them to high taxes and the consequent need of the peasantry to sell in large quantities. Theophanes, ed. de Boor, I, 443. From Nicophorus, however, we learn that an alternative explanation of abundance was current in the city. Nicephorus, ed. de Boor, p. 76.

¹⁴³ Ps.-Symeon, *De Romano Const. Porphyry. f.*, c. iii (ed. Bonn, p. 759); Theophanes Cont., *De Romano C.P. f.*, c. xiii (ed. Bonn, p. 479).

year throughout the east, and prices were particularly high and supplies crucially short in the Egypt of the Ikhshidids.¹⁴⁴

But it would be difficult indeed to trace an aggravation of the famine of 968 to influences other than the expedition into Osroene and Syria, undertaken by Nicephorus Phocas, for the shortage had continued into the reign of that unpopular Emperor, and the chroniclers did not hesitate to accuse him of turning the situation to his own profit. Whatever justification there may be for their accusations—and there seems to be very little—Zonaras, Cedrenus, and even Liudprand of Cremona admit that the high prices were caused initially not by the Emperor's manipulations but by a preexisting disequilibrium,¹⁴⁵ and it is Liudprand, all unwittingly, who provides further evidence on the source of the imbalance: the impact of military demand.

Fortunately that disgruntled writer visited the imperial city in 968, the very year in which Nicephorus prepared for his great campaign. Once again, it had been a year of generally bad harvests, and the Emperor probably knew well that whatever God's bounty might be, he would be forced to campaign in a wasted land. Had he ever read the *De cerimoniis* he would have learned Constantine's advice to that effect.¹⁴⁶ Recent experience would have taught him the same lesson, for a shortage of supply had forced John Tzimiskes to raise the siege of Massisa and even an ally of the arch-enemy, Saif ad Daulah, to break up his camp.¹⁴⁷ Only in what was presumably the theme of Mesopotamia had the field mice spared the harvest of 968. So from that region Nicephorus gathered his grain, transporting it possibly to Caesarea where expeditionary forces were usually collected.¹⁴⁸

On the 19th of July, Nicephorus despatched his fleet and ordered Liudprand to wait upon him. After a foul meal on the twentieth, climaxed by perjury on the part of the Emperor, the Bishop of Cremona returned to the lodgings he found so miserable. The next sequence of events might best be given in his own words.¹⁴⁹ "His conversation took place on Monday, the 20th of July, and for the next nine days I received no supplies from him at all. This, too, was at a time when the famine at Constantinople was so severe that three gold pieces were insufficient to provide one meal for my twenty-five attendants and our four Greek guards. On the fourth day of that week Nicephorus left Constantinople to march against the Assyrians." Could there be any clearer indication of the disruption that the departure of an expeditionary army might create in the equilibrium of

¹⁴⁴ The cause was insufficient floods of the Nile over several years, with costs particularly high and shortages acute in 968: *Histoire de Yahya ibn Saïd d'Antioche*, ed. and trans. J. Kratchkovsky and A. A. Vasiliev, *Patrologia Orientalis*, XVIII (1924) pp. 812 f.

¹⁴⁵ Cedrenus, ed. Bonn, II, 372–374; Zonaras, *Compendium historiarum*, XVI, 28, 1–13, ed. Bonn, III (1841–1897), pp. 513 f.; Liudprandus, *Relatio de legatione*, cc. xxxiv, xlv (ed. Becker, MGH, pp. 193, 198 f.).

¹⁴⁶ *De cerimoniis*, I, App. (ed. Bonn, I, 486).

¹⁴⁷ Yahya ibn Saïd, ed. Vasiliev, 793 f. (A.D. 964); Nicephorus himself had been forced to withdraw from Antioch for the same reason.

¹⁴⁸ Liudprandus, *Relatio de legatione*, c. xlv (ed. Becker, *op. cit.*, pp. 198 f). Liudprand's observations at this point confirm the impression of normally abundant supplies suggested by the evidence in note 142, above: "This year famine had wasted the land of the Argives to the point that two Pavian sextarii of corn could not be bought for one gold piece, and this where abundance usually holds sway."

¹⁴⁹ *Ibid.*, c. xxxiv (ed. Becker, *op. cit.*, p. 193).

civilian demand and supply? The advice Constantine VII had given his son was wise indeed: Upon setting out on an expedition, make sure that the city remains in a posture of defense during your absence, but be discreet in your preparations, lest a shortage of grain result.¹⁵⁰

Nor is it surprising that the famine continued and was still raging in 970 under John Tzimiskes,¹⁵¹ for with the change to a pattern of predominantly offensive warfare, necessitating the siege and reduction of great cities, methods of supply had to be altered. The advice on matters of supply to be found in the treatise, *De castrometatione*, composed after 988, differs not only from the suggestions of Maurice and Leo, but from the system outlined in the *De velitatione bellica* as well. Siege warfare at the end of the tenth century could be supported only by continuous exports from the "land of the Romans" itself. Herein lies the essential change, and it seems advisable to translate in full the pertinent passage from the *De castrometatione*.¹⁵²

"Those who wish to capture walled cities in war and thereby bring the enemy completely down should make use of frequent incursions against the fields of those cities by skirmishes and irregulars (those called corsairs by the westerners) and by the use of other forces of foot or horse. This they should do in order that the enemy may be easily overcome . . . as a result of not being able to work the land as he wishes, but being rather in complete distress. For unless the vines and the fruit-bearing trees have first been cut down, the harvest destroyed by fire, and the animals carried off, in order that the pressure of famine may make the enemy flee and take refuge elsewhere, then it will be very difficult to capture cities abundantly endowed, as they will be, with things to make them secure and with an ample force of fighting men. He who has not taken measures of this sort against the enemies, but seeks to capture offhand their armed strongholds, will mount an expedition against them in vain.

"Just as it is necessary to starve the enemy, so abundance must be ensured to the army. If an expedition is to be undertaken against the land of the Saracens, while the provisions have been winnowed out by frequent devastations, and it is impossible in turn for the army to bring from its own fields by its own beasts more than twenty-four days supply of barley, while the cities which are to be attacked are well-inhabited and have supplies for a long time, it will be necessary to raise the siege unless necessities are supplied from the land of the Romans.

"If in the land of the Saracens—so fertile and offering such an abundance of peasants—it is impossible in a short time to succeed and accomplish something according to plan unless the army is supplied from our own land, so much the more is this true in the land of the Bulgars where there is a

¹⁵⁰ *De cerimoniis*, I, App. (ed. Bonn, I, 450).

¹⁵¹ Cedrenus, ed. Bonn, II, 381.

¹⁵² Scriptor Incertus, *Liber de re militari*, c. xxxi (ed. Vári, pp. 37f.). (Note that the title *De castrometatione*, sanctioned by popular usage, does not correspond to the contents of the book).

lack of all things, particularly of barley. For assuredly if the supplies for the army are not forthcoming from our own land, they will have to turn back home without coming to grips with the enemy. What the greatest force and power of the enemy could not do, the lack of supply will effect and it will be necessary to raise the siege."

To sum up, until the great period of military endeavor signaled by this passage, Byzantine armies remained comparable in size to those organized under Maurice and in consequence somewhat smaller than the largest expeditionary forces Belisarius commanded. If, until the tenth century, the armies were small, they maintained both then and later the trend towards decentralization already noticeable under Justinian. In yet another way Byzantine military organization continued in a direction already defined during the sixth century, but unlike precedents offered by the fourth century from its great age of military reform.¹⁵³ In sharp contrast to the armies of Constantine, the medieval Byzantine armies were rurally based. Not until the tenth century, finally, did strategy consistently demand the export of grain to support foreign operations. The consequent strain is clearly visible, and it was fortunate indeed that the Empire's productive capacity had increased to a level capable of at least partially satisfying the demands made upon it. How this feat was accomplished is a question of production or supply, to which we may turn in conclusion.

2. *The Supply of Grain*

A complete analysis of the agricultural economy of the Byzantine Empire would consider, first, the extensive variety of its soils and climates; second, the techniques employed to produce the harvests these factors would permit; and finally, the modes of agrarian living whereby men shaped the environment to their needs and adapted themselves to their environment. While such an analytical structure may be kept in mind, it cannot be attempted here. The object of this section of our study is far more limited. It attempts to answer only the following questions, which are essential to evaluating the success of the agricultural adjustment from 619 to 1025: What were the new sources of supply? Had the impact of the new demand, altered and reduced from its counterpart in the later Roman Empire, been met by improvements in the extent and intensity of cultivation?

Some of its new sources of supply the Empire found outside its own political frontiers. At times and in varying degrees, Byzantine Constantinople depended upon the peoples north of the Bosphorus, chief among them the Bulgars of the Danube. Commercial provisions in the treaty of 716 and the proposed accord of 812 between Byzantium and the first Bulgarian Empire, the war of 894 with Symeon—originating as it did in a dispute over the conditions of trade—all these are evidence that merchants travelled between Constantinople

¹⁵³ Zosimus, *Historia nova*, II, 54, ed. L. Mendelssohn, (Leipzig, 1887), pp. 91f.; cf. Mazzarino, *Aspetti sociali*, pp. 320–329.

and the Black Sea ports of Anchialus and Mesembria. Among the products they chose to export it seems safe to include grain. If in the seventh and eighth centuries the Bulgars were not themselves capable agriculturalists, they could follow the practice of the Avars and draw upon the services of Slavic peoples subject to or associated with them. By exporting the products of the soil in which their land could be quite rich, the Bulgar aristocracy and later the church could maintain a balance of payments for liturgical objects as well as for those luxury goods they cherished so dearly. By the end of the tenth century, Byzantium depended so closely upon exports from and through the Bulgar kingdom that Basil II's great victory at Cimbalongus, followed by the swift disintegration of Samuel's state and the consequent termination of the commercial blockade he apparently imposed, produced a new era of abundance of the "necessary things" at Constantinople.¹⁵⁴

In contrast, Cherson seems to have been often, if not consistently, the center of a grain deficit area on the north shore of the Black Sea. In 654-655 the exiled Pope Martin complained bitterly that grain was often mentioned but never seen in the Crimea; it was only from the crews of Byzantine ships venturing in search of salt that he was able to buy his bread.¹⁵⁵ A fragmentary report which it is a temptation to write off as, at most, the chance record of a temporary famine received confirmation from Constantine Porphyrogenitus in the tenth century:¹⁵⁶ "If the Chersonites do not journey to Romania and sell the wax and hides they get from the Pechenegs, they cannot live. If grain does not pass across from Aminsos, and from Paphlagonia and from the Boukellarioi, and the flanks of the Armeniakoi, the Chersonites cannot live." Byzantine literary sources have nothing to say about the agricultural and commercial situations of the other Greek cities of the Black Sea coast, and it is always possible that theirs may have been better.

Nor do these same sources mention exports from the peoples east of Cherson. Rich though it was in agricultural products, the land of the Khazars seems to have exported only isinglass.¹⁵⁷ Arab and Persian geographers mention a trade in furs undertaken by the Bulgars of the Volga, and a similar export wherein the Russian Kaganate of the Kuban delta engaged, supplementing it—for Cherson and the Byzantine market—with deliveries of swords and slaves. A people without cultivated fields of their own, these Rus consumed the grain they levied as tribute from the Aso-Slavs of the Don and Azov regions.¹⁵⁸

After the formation of the Kievan state in the ninth century, Russian merchants from the north entered into direct commercial relations with

¹⁵⁴ Sources: Theophanes, ed. de Boor, I, 497; Theophanes Cont., *De Leone Basilii filio*, c. ix (ed. Bonn, pp. 357f.); Michael Attaliates, *Historia*, ed. Bonn (1853), p. 234. Discussion in I. Sakazov, *Bulgarische Wirtschaftsgeschichte*, Grundriss der slavischen Philologie, V (Berlin, 1929), pp. 49f., and for a contrasting view on agriculture: G. Féher, *Les monuments de la culture protobulgare*, *Archaeologica Hungarica*, VII (Budapest, 1931), *passim*.

¹⁵⁵ Martinus, Epp. XVII, XVIII (Migne, *PL*, 87, cols. 202f.).

¹⁵⁶ Constantinus Porphyrogenitus, *De administrando imperio*, c. liii, ed. G. Moravcsik and R. J. H. Jenkins (Budapest, 1949), p. 286.

¹⁵⁷ D. M. Dunlop, *The History of the Jewish Khazars* (Princeton, 1954), pp. 224-234, esp. 228.

¹⁵⁸ Ibn Khordadbeh, *Khitab al masalik*, ed. and trans. de Goeje, *BGA*, VI, 115. See G. Vernadsky, *Ancient Russia* (New Haven, 1943), pp. 261-307, esp. 282 ff.

Constantinople. Their commercial fleet, composed of the monoxyla or "single-straker ships," sailed down the Dnieper from Kiev in June, bearing furs of castor, black fox, sable, and ermine, together with honey, wax, and slaves. To these forest products, the Russian Primary Chronicle, Constantine Porphyrogenitus, and Ibn Khordadbeh alike fail to add grain. It has been suggested that grain constituted an important object of internal trade between north and south Russia, but the Kievan state did not export any to Byzantium before the twelfth century.¹⁵⁹

In fact, there is reason to doubt that the supply from any of the regions to the north of Constantinople seriously challenged, in volume, the grain furnished the capital from other directions. If exports from South Russia cannot be proven to have existed before the twelfth century, the land of the Bulgars must often have failed its Byzantine markets. Krum relied not on trade but on booty to increase his wealth. His successors suffered famine and complained of over-crowding in the kingdom, praying the Empress Theodora to grant them land for living space.¹⁶⁰

Even in the eighth century the shipping lane past Abydus to the south had not lost its importance; in the tenth century its control was essential to domination of the capital. Thus in 742, when Constantine V besieged Artavasdus at Constantinople, the usurper sent out provision boats, laden with grain, which were captured by the imperial fleet based at Abydus.¹⁶¹ At the time of their revolt in 987, Bardas Sclerus and Bardas Phocas captured ships, whose home ports were in Asia Minor, and used them to harass Mediterranean shipping lanes and to blockade the entrance to the Hellespont, hoping thereby to reduce Constantinople through starvation.¹⁶²

Of the potential centers of export to the south, Syria seems to have won a reputation as at least an occasional granary for Constantinople. An eleventh-century version of the tale of Abraham the Jewish moneylender and Theodore the *navicularius* has the latter trading in silks and grains at Syrian ports in the time of Heraclius.¹⁶³ A second reference to Syrian exports occurs in Zonaras' retelling of a tale concerning the Emperor Theophilus. According to the version found in Joseph Genesius and in the *Scriptores post Theophanem*, Theophilus saw from the palace a grain ship sailing around the city, apparently in passage from the south towards the ports along the Golden Horn. Upon discovering that its owner was none other than the Empress Theodora, Theophilus ordered the boat burned, exclaiming that he would not permit his wife

¹⁵⁹ So G. Vernadsky, *Kievan Russia* (New Haven, 1948), pp. 99-102, 116-121. Sources: *De administrando imperio*, c. ix, ed. Moravcsik and Jenkins, pp. 59-63; Ibn Khordadbeh, *loc. cit.*, note 158, above; *The Russian Primary Chronicle*, trans. S. H. Cross, 2nd ed. (Cambridge, Mass., 1953), pp. 64-90.

¹⁶⁰ Sakazov, *Bulgarische Wirtschaftsgeschichte*, p. 57. On Krum, see Scriptor incertus de Leone, ed. Bonn (1842), pp. 344f., and Theophanes, ed. de Boor, I, 484f. For relations under the Amorians: Ps.-Symeon Magister, *De Michaelē*, c. xxv (ed. Bonn, p. 665) and Theophanes Cont., *De Michaelē Theophili filio*, c. xv (ed. Bonn, p. 165).

¹⁶¹ Theophanes, ed. de Boor, I, 419.

¹⁶² Leo Diaconus, *Historia*, X, 7, 9 (ed. Bonn, pp. 170, 173).

¹⁶³ J. Starr and B. Nelson, "The Legend of the Divine Surety and the Jewish Moneylender," *Annuaire de l'institut de philologie et d'histoire orientales et slaves*, VII (1939-1944), p. 307.

to make of him—the Emperor—a shipmaster engaged in sordid trade.¹⁶⁴ This, in sum, is what the earlier historians have to say concerning the incident, and from their pages emerges an unsympathetic Theophilus, endowed with a gentleman's aristocratic contempt for mercantile activity. Zonaras, later in time, but generally careful of his sources, expands the tale in such a fashion as to emphasize Theophilus' concern for justice, a characteristic which even earlier hostile historians could not entirely ignore in their chronicles of the heretic's reign. In Zonaras, the Emperor becomes an apostle of "free trade"; by destroying the boat he puts an end to a threatened monopoly that could only deprive rightful merchants of their revenues. Zonaras sees fit to add one other important detail. The ship's cargo came specifically from Syria,¹⁶⁵ and, whatever the proportion of fact and myth mixed by Zonaras or his source, external evidence suggests that if either one or the other fabricated the Syrian origin of the ship's freight, he had reason to do so. Leo V was forced to issue an edict forbidding his subjects to trade with the peoples in Egypt and Syria.¹⁶⁶ Upon other occasions the Byzantine people and even the state adopted an attitude far less strict. As Cecaumenus observed, the Byzantine general or merchant had no objection to commerce with the enemy save when the battle was hottest, while the anonymous author of the *De velitatione bellica* urged the shrewd general to use, for intelligence purposes, merchants travelling across the Taurus frontier.¹⁶⁷

Despite unanimous praise of the island for its fertility, much less can be said concerning the possibility of exports from Crete. The observations of John Cameniates may be cited as typical of what Byzantine historians and hagiographers, and Arab geographers as well, had to say in honor of Crete. Although they well knew that to land on Crete meant that they would be delivered into the hands of an Arab slaver, Cameniates and his comrades, taken prisoner at the fall of Thessalonica in 904, were not entirely miserable as their ship approached shore, for whatever else might befall them, the wonderfully fertile island would at least offer bread enough to avert starvation. Unfortunately, neither Cameniates nor, seemingly, any other source has anything to say about the export of the island's abundant foodstuffs to Constantinople.¹⁶⁸

We can note only that the loss of the island in 825 was no more felt than that of North Africa or Sicily, and thus consider the fall of Crete as simply another in a long series of catastrophes, ever limiting the consumers within the Empire to the resources of their own land. One by one the Mediterranean granaries, actual or potential, had passed under the control of Islam where other uses were often found for them. In the north a Krum or a Samuel might

¹⁶⁴ Theophanes Cont., *De Theophilo*, c. iv (ed. Bonn, pp. 88f.); Genesius, ed. Bonn, pp. 75f.

¹⁶⁵ Zonaras, XV, 25, 37-43 (ed. Bonn, III, 355f.).

¹⁶⁶ F. Dölger, *Regesten*, I (Munich, 1924), no. 400, p. 49.

¹⁶⁷ Cecaumenus, *Strategicon*, c. lxiv, ed. Vasilievsky and Jernstedt, p. 33; Ps.-Nicephorus Phocas, *De velitatione bellica*, c. 7 (ed. Bonn, p. 196).

¹⁶⁸ Ioannes Cameniates, *De excidio thessalonicensi*, ed. Bonn (1838), p. 384. Compare Theophanes Cont., *De Michaelis Amor.*, c. xxi (ed. Bonn, pp. 73f.), *Vita Nicolai Studitae*, Migne, PG, 105, col. 868; Al Istakhri, trans. A. D. Mordtmann, *Das Buch der Länder* (Hamburg, 1845), p. 43.

withhold supply while the people of Cherson looked south to Asia Minor for life's necessities. While even hostile frontiers were by no means formidable barriers to trade, would not Constantinople and the army have had to search for the bulk of predictable supply in Bithynia, Lydia, Thrace, Phrygia, or Macedonia? It is George of Pisidia, the epic poet of Heraclius' Persian Wars, who provides the answer, terse but unmistakable, for the first crisis in 619.¹⁶⁹ In the midst of a lengthy encomium on the Emperor he paused to note: "If He who weighs all things had not through you driven off the furies from near to us, who—in so great a shortage of the things necessary to life—had persuaded the cities to share their sustenance?" When (if the *Annales* of Eutychius can be credited) the young Heraclius provisioned Constantinople from Thessalonica, he apparently set a pattern for the following years.¹⁷⁰

Above all, it is by tracing, with the aid of the *Miracula Sancti Demetrii*, the relations between these two great cities that we learn how men of the seventh century organized and distributed their resources in grain so as to share their sustenance. Even the authors of this remarkable document, informative though they are on economic relationships, do not of course discuss such matters as independent objects of interest; only insofar as they are incidental to two sieges that Thessalonica withstood in the seventh century do details concerning sale and transport of grain find a place in the pages of the *Miracula*. The first siege, the Avar-Slav attack of 617 or 619, caught many of the inhabitants outside the walls, gathering their own harvest. Yet Thessalonica did not depend entirely upon its own hinterland; in the midst of the battle came merchants from Constantinople bearing grain. Since the fact of the siege was not known at the capital, the merchants presumably had not been dispatched as an emergency measure.¹⁷¹

Particularly interesting is their reaction to the siege itself. Unlike the merchants who had abandoned Rodosto in Justinian's time, unlike the fearsome sailors who had shunned Thessalonica in 597, the captains and crews alike took up weapons and helped beat off the barbarians. There could be no better illustration of what is really meant by the "militarization" of the Byzantine Empire. Militarization lay not in so formal a matter as the union of civil and military power in the hands of the *strategos*, but rather in learning to live with risk, a lesson which the Byzantine people seem to have learned rather early in the seventh century.

For a talent like this the people of Thessalonica found good use during a second great siege, undertaken probably in 662 by Drogouvites, Rhynchinians, and Sagoudates. Well aware upon this occasion of the coming storm of Slavic peoples, the Emperor at Constantinople wrote to the chief men of the city, urging them to conserve grain in the storehouses. This they refused to do. Greedy for profit, they sold the grain at seven *modii* to the *nomisma*, shipping it out in such haste that they did not pause even to pay the export duties.

¹⁶⁹ Georgius Pisides, *Expositio Persica*, III, 300, ed. Bonn (1836), p. 40.

¹⁷⁰ Eutychius, *Annales*, Migne, PG, III, col. 1085.

¹⁷¹ *Miracula S. Demetrii*, secs. 170, 177, 178 (*Acta SS.*, Oct. IV, 167, 169, 170). Cf. *ibid.*, secs. 66, 71 (*Acta SS.*, Oct. IV, 128, 129f.).

Fortunately, the Emperor himself saw to Thessalonica's needs sending boat-loads of grain from Constantinople to help the besieged city resist her attackers. But the men he had chosen for this task proved unworthy. They sold the grain at advanced prices to the citizens, forcing the latter to send a deputation to purchase grain from the Velegezites, a friendly tribe of Slavs located near Demetrias in Thessaly. Luckily, the siege was shortly over. From the Emperor arrived not merely the 5,000 *modii* Thessalonica had requested, but 60,000 measures in all, while the deputation returned from Thessaly bearing provisions from the Slavs. With significant assistance from certain Slavic peoples settled in Greece, the cities—as George of Pisidia had indicated—shared their supplies in time of crisis.¹⁷²

Ships and carts laden with grain often travelled in the opposite direction, from Macedonia and Thrace eastward to Constantinople; but before examining the evidence for such exports, we should note briefly the description of Thessalonica and its environment which John Cameniates provided not quite three centuries later. If we contrast this later description to that of the seventh-century city of the *Miracula*, it is possible to trace agricultural and commercial development, matters that must often remain subject to hypothesis at Constantinople. The city, John noted, had recently expanded. Both the walls and the plains around them offered refuge to subjects of the Byzantine emperor whenever they had to flee from islands that were prey to the depredations of Arab pirates. The years of warfare were long past; swords had become plowshares as the Slavs elected the ways of peace. To the east of the city one could see cultivated fields, interspersed with growing vines, while to the west lay another urban center, that of Berrhoea. About the walls of this second city lay villages, cloaking the countryside like a mantle. Some of them were subject to Byzantium's emperor; others paid tribute to the Bulgars. In times of peace a healthy commerce flourished between them, increased and multiplied by the great rivers flowing nearby. Up the Vardar ships from the sea bent their course, while on fast days the river supplied fish in abundance to provision the urban market. In one respect Thessalonica of the tenth century seems to have differed somewhat from its predecessor of the seventh. While the land outside the walls still lay open to agricultural exploitation, the city now maintained a fleet of ships to search out and import grain for the urban market. Although, as is manifest from details in the *Miracula* such as the collection of the export duties, a water-borne grain trade had by no means ceased to exist; urban growth had brought with it an increased demand which could be satisfied only by an organized system of imports.¹⁷³

Turning back to the *Miracula*, and moving with its narrative along the Thraco-Macedonian littoral, we find that lands not far from Thessalonica may have furnished grain in exchange to Constantinople. Once the siege of 662 had ended, the Slavs returned to their villages, abandoning their hopes for a home

¹⁷² A. Tougaard, *De l'histoire profane dans les actes grecs des Bollandistes* (Paris, 1874), pp. 158, 164, 166, 187; *Miracula S. Demetrii*, sec. 193 (*Acta SS.*, Oct. IV, 175).

¹⁷³ Cameniates, *De excidio thessalonicensi*, cc. iii–vi, lxi (ed. Bonn, pp. 490–496, 572).

in Thessalonica. Two tribes alone remained an object of concern to the emperors: the Strymonians and the Rhynchinians. The *Miracula* explains why Constans II and his successors found it necessary to mount expeditions against these people to the west of their capital.¹⁷⁴

“And once again assistance came from the intercession of Him who loves the city. For while the other Slavs in these parts were settling down and had laid down their arms, those from the Strymon and the Rhynchinus continually seized numbers of sailors returning from the transport of produce to the imperial city. And they returned with many craft to their homes, making prisoners of those from the islands and from the narrows of the sea, together with those in Parium and the Proconnesus; even did they make prisoners of those in the toll station together with the ships of the fleet.”

Thus grain came to Constantinople from the west.

Years later, in 821 to be precise, the biographer of a chance voyager in the neighborhood of the Strymon provides further information on shipping in that region. Saint Gregory of Decapolis, turned back probably by *force majeure* from Constantinople, took ship to Chrystopolis on his return voyage to Thessalonica. Disembarking for reasons his biographer did not disclose, he pursued his journey by a great road, probably the Via Egnatia. In the words of the biographer, Ignatius: “From Enos by boat he went to Chrystopolis. From there, disembarking from his boat, he came to a certain river, on which he fell in with Slavic pirates, coursing along the banks of the river with their small craft, and plundering the boats they came upon.”¹⁷⁵ Evidently, according to the observations of the editor of the Life, the Slavs in the early ninth century were not quite the peaceful people Cameniatas makes of them in the tenth. They seem to practice their piracy *on* a great river, probably to be identified with the Strymon. In 821, then, shipping must have moved inland from the sea, up the course of a river famous for the productive fields along its banks.

Unfortunately Ignatius has little else to say of the sights Gregory may have seen in his journey from Constantinople to Thessalonica, and it is left to the Arab prisoner of war, Harun ibn Yahya, to mention the many villages and fields of grain to be seen as one made the twelve days' journey from east to west.¹⁷⁶ One of the most important ports in the region was the harbor of Rodosto. In the eleventh century the logothete of Michael VII, Nicephoritzes to his familiars, established at its gates a depot or *foundax* wherein he endeavored to corner all the grain the hinterland produced.¹⁷⁷ The significance of Rodosto,

¹⁷⁴ *Miracula S. Demetrii*, sec. 190 (*Acta SS.*, Oct. IV, 174).

¹⁷⁵ *Vita Gregorii Decapolitae*, c. x (ed. Dvornik, pp. 54f., and cf. p. 31). Between the periods represented by the *Miracula* on the one hand (early and middle seventh century) and the life of Gregory on the other (early ninth century), the *cleisurae* of the Strymon had been organized by Justinian II and garrisons installed there. Possibly exports from the Strymon are to be dated from that point. Constantinus Porphyrogenitus, *De Thematribus*, ed. A. Pertusi (*Studi e Testi*, 160) (Rome, 1952), pp. 88f.

¹⁷⁶ A. A. Vasiliev, “Harun ibn Yahya and His Description of Constantinople,” *Seminarium Kondakovianum*, V (1932), p. 162.

¹⁷⁷ Bratianu, *Etudes byzantines*, pp. 141–157.

however, began before the eleventh century. In the tenth, Gregory, a disciple of Saint Basil the Younger, paused at the shrine of Saint Stephen to pray for a safe voyage by land and sea as he journeyed to his *proasteion* to gather the season's harvest in the summer's heat.¹⁷⁸ Much of the economic adjustment after 619 can certainly be explained simply by the history of Rodosto itself. Abandoned and disused in Justinian's time, its port was used in the tenth century by at least one of Constantinople's gentry to gain access to fields of grain he must have accounted himself fortunate to own.

Yet if the Arabs at Cyzicus in the seventh century deprived Constantinople of Sicilian grain, they must also have kept from its markets supplies from the Strymon and possibly from Rodosto as well, thus forcing the city to gather what it could from the European suburbs and the provinces to the east. Of vital importance were the grain fields located in what had been known, under the later Roman Empire, as the European district of the diocese of Thrace. When the Avars fell upon the city in 626, they captured citizens who had ventured out beyond the Theodosian walls to the tenth milestone to gather the harvest they had planted.¹⁷⁹ At the time of the siege of Thessalonica in 662, a bureaucrat from Constantinople owned a *proasteion* in Thrace, while the sources of the *Khitab al Uyun* report that Maslamah's attack in 717 deprived the citizens of gainful employment by land and sea.¹⁸⁰ During those grim years—again according to the *Khitab*—the suburban fields could not support the massed army, but their condition seems gradually to have improved. When the army of Constantine V took up its position in Thrace near the city walls, it deprived the partisans of Artavasdus, besieged within, of the necessities of life.¹⁸¹ Finally, the ninth-century source of the *Khitab al Uyun* has a glowing report to submit on agricultural conditions in the lands nearest the Theodosian walls:¹⁸² "If an army went at the present time to Al Kustantiniyya, when it was in need of provisions, and there was no importation of corn, their provender dealers would bring them more than they wanted, from the places nearest them." There seems little reason to doubt this source. Krum was able to gather rich booty from the Thracian *proasteia*; Leo V founded numerous cities in Thrace and Macedonia, and the rich Thracian *proasteia* of a certain Stephen were spared the effects of drought thanks to a miracle worked by a refugee saint.¹⁸³

No less important were the lands across the Bosphorus and on the south

¹⁷⁸ *Vita Basilii Iunioris*, c. xlii (*Acta SS.*, Mar. III, App., p. 28).

¹⁷⁹ *Chron. Pasch.*, ed. Bonn, p. 717.

¹⁸⁰ Tougard, *Actes grecs*, p. 152; *Khitab al Uyun*, trans. Brooks, "Campaign of 716–718," *JHS*, p. 23.

¹⁸¹ Nicephorus, ed. de Boor, p. 61.

¹⁸² *Khitab al Uyun*, *loc. cit.*, note 180, above. See the discussion of this passage in P. J. Alexander, *The Patriarch Nicephorus of Constantinople: Ecclesiastical Policy and Image Worship in the Byzantine Empire* (Oxford, 1958), pp. 123f., who suggests that Leo III or Constantine V may have been responsible for the abundance of the early ninth century which contrasts so strongly with the dearth of grain in 718. "Perhaps the mass transplantations of colonists to Thrace under the Isaurian dynasty were prompted by the desire to recolonize this region and render it capable of supplying the city with grain." This hypothesis seems all the more reasonable in view of the similar measures undertaken, under strikingly comparable circumstances, by Mehmed II. See above, note 62.

¹⁸³ Ps.-Symeon Magister, *De Leone*, c. viii (ed. Bonn, p. 612); Theophanes Cont., *De Leone*, c. xix (ed. Bonn, p. 30); *Acta Davidis, Symeonis, et Georgii Mitylenae*, c. xxi, ed. in *Analecta Bollandiana*, XVIII (1899), p. 236.

shore of the Sea of Marmora. The biographer of Michael Maleinus reported Bithynia to be abundant in flowing water and in all good things. We need not, however, wait until the tenth century to find evidence of the importance of its land to the subsistence of Constantinople.¹⁸⁴ When in 641 Valentinus and his army plundered within the city's walls vineyards owned by many of its citizens, economic interests dictated that an early peace be concluded between the opposing forces.¹⁸⁵ In the ninth century, the patron of Saint Basil the Younger owned a vineyard near Chalcedon wherein he wished to bury the Saint's relics, while Leo the Wise assigned the wine from imperial estates in Bithynia to the support of Saint Euthymius' monastery.¹⁸⁶

The Bithynian lands of the Opsician theme, covered with the small villages St. Theodore encountered every day in his journey from Saccudio to Lampsacus, also produced grain in abundance. On the family properties at Boscytium, not far from Saccudio, Theodore and his uncle Plato hauled out the dung from the stables, irrigated the land, and broke new furrows with the plow.¹⁸⁷ In the district of Prusa, the monastery of Saint Eustratius owned *proasteia* whence the monks transported by cart the grain they needed at home.¹⁸⁸ Once the Arab armies had been driven off in 718, boats set out from Constantinople to Chalcedon and to the southern shore of the Sea of Marmora, bound to collect grain and other provisions for those who had survived the siege. In 866, Symbatius and George Piganis, the *strategos* of the Opsician theme, laid waste at harvest time the country estates of Constantinople's powerful families.¹⁸⁹ Many a monastery at Constantinople owned *proasteia* in the Opsician theme and elsewhere in Asia Minor. But the lives of the saints, abundant as they may be in tales woven about the journeys a steward of such an estate might make to the capital, fail to indicate whether or not the functionary brought with him grain to supply the mother house.¹⁹⁰

In the life of Saint George of Amastris, the Pontic coast at the end of the ninth century is reported as the scene of vigorous activity in shipping, with merchants from Amastris found at Trebizond and with the harbors near the mouth of the Sangarius in constant use. The themes for which such harbors provided natural outlets exported their grain, as we have seen, to the Crimea; of any shipments to Constantinople there seems to be no evidence.¹⁹¹

Among the ports situated on the southern and western coasts of Asia Minor, destined for later importance when Italian merchants exported their cargoes of grain from there, Ephesus at least may have been a "city that shared its

¹⁸⁴ *Vita Michaelis Maleini*, c. xv, ed. L. Petit, "La vie de saint Michel Maleinos," *Revue de l'orient chrétien*, VII (1902), p. 560.

¹⁸⁵ Nicephorus, ed. de Boor, p. 30.

¹⁸⁶ *Vita Basilii Iunioris*, c. lv (*Acta SS.*, Mar. III, App., p. 31); *Vita Euthymii*, IX, 16f., ed. de Boor (Berlin, 1888), p. 28.

¹⁸⁷ Theodorus Studites, Ep. I, 3 (Migne, *PG*, 99, col. 916f.); *Vita Theodori Studitae*, cc. vi, vii (Migne, *ibid.*, cols. 121-123).

¹⁸⁸ *Vita Eustratii hegumeni*, c. xxix (ed. Papadopoulos-Kerameus, *Analecta*, IV, p. 387).

¹⁸⁹ Theophanes, ed. de Boor, I, 397; Theophanes Cont., *De Basilio*, c. xix, (ed. Bonn, p. 240).

¹⁹⁰ See, e.g., *Vita S. Ioannicii*, cc. xv, xxxiii, lviii (*Acta SS.*, Nov. II, pt. 1, 361, 392, 422).

¹⁹¹ *Vita Georgii Amastridos*, c. xxvii, ed. V. G. Vasilievsky, *Trudy*, III (St. Petersburg and Leningrad, 1908-1930), pp. 42, 54f.

sustenance" with Constantinople. Even in the eighth century it held a fair, while, not far from it, the Menander valley had won a reputation among ninth-century sources for its richness and fertility.¹⁹² In the harbor of Ephesus, Saint Gregory of Decapolis found many ships, bound for Constantinople, but fearful of venturing into waters that pirates had rendered dangerous. Gregory persuaded the masters to set sail; further evidence that coastal shipping continued despite the risks.¹⁹³ For the support of a monastery founded near Ephesus by Saint Lazarus, monks in the eleventh century sought out grain in the "ports of Lydia," while two centuries earlier pious citizens of Smyrna with a boatload of grain alleviated a famine afflicting the monks and their charges on Lesbos.¹⁹⁴ Finally, for the ports on the southern coast indications are too few to permit generalization. Exports from Attalia, situated in a populous plain according to al Istakhri or his sources, supported the army of Nicephorus II in Crete, but the ninth-century Life of Saint Anthony the Younger reveals no more than that the port was active in that century.¹⁹⁵

But if the cities in the sixth century could not "share their sustenance," how could they have done so in the seventh? What adjustments of production or distribution permitted the Empire's heartland to satisfy in general a demand it never met successfully under Anastasius, Justinian, or Maurice?

Roads and bridges were maintained in a condition adequate to bear heavy, constant traffic. Good roads united Caesarea in Cappadocia with the market towns surrounding it, and communications between Berrhoea or Thessalonica and their hinterland seem to have been swift and easy. The Via Egnatia could still be used in the ninth century, lesser roads elsewhere were heavily frequented in the succeeding centuries. In his journeys about Greece, Nikon the Metanoite found land travel by no means difficult, while the voices of those passing on the highway nearby annoyed Lazarus at his monastery near Ephesus. His monks complained that these same travellers continually ate the beans planted regrettably close to the thoroughfare. In Galatia, Luke the Stylite grieved over the poor who lined the great road. The construction and maintenance of the highways was a *corvée* that burdened the taxpayer, and the peasants near Lazarus' mountain retreat were apparently skilled in such tasks, for, in their eagerness to be able to visit the holy man more often, they broke up rocks and built a fine road up to the recluse's cell.¹⁹⁶

While such information from the lives of the saints demonstrates that transportation facilities were maintained in good condition, it has not been

¹⁹² Theophanes, ed. de Boor, I, 469; Cedrenus, ed. Bonn, II, 199.

¹⁹³ *Vita Gregorii Decapolitae*, c. ix (ed. Dvornik, p. 53).

¹⁹⁴ *Vita Lazari in monte Galesio*, c. xc (*Acta SS.*, Nov. III, 536); *Acta Davidis*, c. xiii (ed. *AnBoll*, XVIII [1899], p. 225).

¹⁹⁵ Al Istakhri, trans. Mordtmann, p. 43; compare the accounts from ibn Hauqal translated by M. Canard in A. A. Vasiliev, *Byzance et les Arabes*, II, pt. 2 (Brussels, 1935-), pp. 414-416; *Vita Antonii iunioris anachoretæ*, *passim*, ed. A. Papadopoulos-Kerameus, *Pravoslavnyi Palestinskii Sbornik*, XIX (= fasc. 57), (1907), pp. 186-216.

¹⁹⁶ Caesarea and Ephesus: *Vita Lazari*, cc. xi, xxvi, xxxiv, xxxvi (*Acta SS.*, Nov. III, 512, 517, 520); Thessalonica: Cameniatas, ed. Bonn, p. 500; Via Egnatia: *Vita Gregorii Decapolitae*, cc. xviii. (ed. Dvornik, pp. 62f.); Greece: *Vita Niconis*, ed. Lambros, pp. 159f., 176; *Vita Lucae Stylitæ*, c. ix (ed. Delehaye, p. 204).

possible to discover any evidence of technological improvement that would have cheapened transport and have rendered the hinterland, in consequence, more accessible to far distant markets. References to the cartage of grain are frequently to be found in the saints' lives; mules were sometimes applied to the task as well as oxen, but whether loads were greater and costs cheaper than formerly we do not know.¹⁹⁷

We cannot prove either that a significant diminution of local demand was one of the factors in the economic adjustment, for that could have resulted only from an extensive and permanent reduction in the quantity of cities, together with a profound alteration in the character or quality of urban life. A recent study of Byzantine cities, it is true, hints at such developments, suggesting that industrial centers, as well as those lacking in commercial or political importance, disappeared, contracted, or turned to agriculture during the seventh and eighth centuries.¹⁹⁸ Even in Asia Minor, the author contends, the decline of Ephesus and Pergamum and the disappearance of Heracleia lend substance to a comment made by the anonymous author of the "Regions of the World":¹⁹⁹ "In the days of old, cities were numerous in Rum, but now they have become few. Most of the districts are prosperous and pleasant and have each an extremely strong fortress on account of the frequency of the raids. . . . To each village appertains a castle where in times of flight they may take shelter."

While urban life was certainly threatened and possibly partly extinguished in some provinces, it is impossible either to accept without question the author's general conclusions from his evidence or, in turn, to deduce from his conclusions a lessening in the urban demand once represented by the provincial cities. Even in Greece and the Balkans, cities and the urban way of life subsisted in some regions, and elsewhere soon began again to flourish. Commercial activity of some proportions, as we have seen, distinguished Thessalonica in the seventh century, and even in 747 Constantine could recruit brick makers and potters from Thrace and Greece.²⁰⁰ Episcopal sees in Thrace, Haemimontus, Europe, and the Rhodopes reappeared as the Iconoclast emperors sought to convert the Slavs and protect their northern frontiers.²⁰¹ In Thrace and Macedonia Leo V founded cities, which may not have been dedicated exclusively to purposes of defense.²⁰² Late in the ninth century, perhaps early in the tenth, Saint Peter at Argos taught the children of his city, as well as strangers under his protection, the liberal arts and crafts that would be most useful to them if

¹⁹⁷ *Vita Eustratii*, c. xxix (ed. Papadopoulos-Kerameus, *Analecta*, p. 387); *Vita Lazari*, c. ccix (*Acta SS.*, Nov. III, 572); Bréhier, *Civilisation byzantine*, pp. 175 f.

¹⁹⁸ A. P. Kazhdan, "Vizantiiskie goroda v. VII–XI vv.," *Sovetskaia Arkheologiia*, XXI (1954), pp. 164–188. For a different point of view, see Kirsten, "Byzantinische Stadt," pp. 19–34, who believes that the ancient polis was partly replaced in the middle ages by the fortress settlement.

¹⁹⁹ *The Hudud al Alam: The Regions of the World*, trans. V. Minorsky, Gibb Memorial Series, N. S., 11 (London, 1937), p. 157. For flight to the *castra*, see Theophanes, ed. de Boor, I, 452; Ps.-Nicephorus Phocas, *De velitatione bellica*, cc. ii, xii (ed. Bonn, pp. 188, 215).

²⁰⁰ Theophanes, ed. de Boor, I, 440. For craftsmen and builders in Bithynia in the early ninth century, see *Vita Ioannicii*, cc. xx, xli, xlv (*Acta SS.*, Nov. II, pt. 1, 351 f., 407 f., 410).

²⁰¹ F. Dvornik, *Les Slaves, Byzance et Rome au IX^{ème} siècle* (Paris, 1926), pp. 74–99.

²⁰² Genesisius, ed. Bonn, p. 28.

they moved to another city, to the fields, or to a *proasteion*.²⁰³ Athens manifested signs of activity in the tenth century, while the life of Saint Nicon tells of Jewish merchants at Sparta and of specialized craftsmen engaged in the building trades.²⁰⁴

In the themes of Asia Minor both the coastal cities and the unwalled market town or *κωμόπολις* continued to exist, and in the eighth century, as we have noted, Ephesus held its fair.²⁰⁵ Round about the major urban centers, the countryside continued to support unwalled market towns throughout the seventh and eighth centuries. In one of his novels, Heraclius mentions the emporia, and the parents of Saint Stephen the Younger are supposed, in the company of many others, to have fled Constantinople during the Iconoclast persecutions, taking shelter in a *κωμόπολις*.²⁰⁶ Nicaea and Caesarea were large and populous in the tenth century, the former containing an important colony of Jewish merchants.²⁰⁷ The Life of Saint George of Amastris, in particular, reflects an urban point of view. The chief men of Amastris, along with the clergy, visited the Saint and begged him to become their bishop, suggesting that it was his duty toward the city which had educated and sustained him.²⁰⁸

Some further points should be noted. The appearance in many provinces of the Empire of the fortress settlement with its reduced precincts is significant, but does not necessarily prove that population and demand diminished. Furthermore, the conditions that led men to abandon the extensive area of the ancient *polis* and to take refuge in the fortress would hardly have been conducive to the export of agricultural surpluses. It was precisely those port cities, which, as we have seen, had once been in a position to challenge Constantinople for grain supplies that survived adversity and hard times. Thessalonica and Ephesus, in fact, maintained some degree of urban specialization, and consequently of need for agricultural products, even during the seventh and eighth centuries. In the absence of any indication of improved facilities for land transportation it is difficult to believe that the supposed disappearance of inland urban centers could have worked greatly to the benefit of Constantinople.

Within the agricultural economy itself there seem to have been no technological improvements significant enough to be considered adjustments. Although it is possible that the horseshoe and the improved collar were used after the ninth century, the wither-yoked ox remained the foremost beast of labor.²⁰⁹ Mules, it might be added, won, or maintained, considerable importance. With admiration for his hard work and humility, the biographer of Theodore

²⁰³ *Vita Petri ep. Argivorum*, c. xii, ed. A. Mai, *Novae Patrum Bibliothecae*, IX, iii (Rome, 1852-1905), 8.

²⁰⁴ For Sparta, *Vita Niconis*, ed. Lambros, pp. 163f., and on Athens, Kazhdan, *op. cit.*, p. 177f.

²⁰⁵ See above, note 192.

²⁰⁶ *Novellae constitutiones imperatorum post Iustinianum*, Coll. I, nov. xxiv, ed. Zachariä, *Jus. Gr.-R.*, III, p. 42. *Vita S. Stephani iunioris*, ed. Migne, *PG*, 100, col. 1088. See also Ducange, *Glossarium ad scriptores mediae et infirmae graecitatis* (Lyons, 1688), s.v.

²⁰⁷ Theophanes Cont., *De Constantino prophrogenito*, c. xlix (ed. Bonn, p. 464); *Vita Constantini olim judaei*, c. li (*Acta SS.*, Nov. IV, 642); *Vita Lazari*, c. xxvii (*Acta SS.*, Nov. III, 517).

²⁰⁸ *Vita Georgii Amastridos*, c. xv (ed. Vasilievsky, p. 26).

²⁰⁹ Lefèvre des Noëttes, "Le système d'attelage du cheval et du boeuf à Byzance," *Mélanges Diehl*, I, (Paris, 1930), pp. 183-191; Bréhier, *Civilisation byzantine*, pp. 175f.

the Studite tells how the youthful Saint bent his shoulders to heavy and repellent baskets of mule dung on his Bithynian estate.²¹⁰ In the region of Thessalonica, mules were used for the lighter tasks after the oxen had broken new land or fallow.²¹¹ Whether mule or ox, however, the animal never pulled behind him the wheeled, overturn plow. Work in the fields was conducted with the aid of the old aratrum, supplemented by a double-pronged hoe and a spade.²¹²

In general arable lands failed to receive adequate manure. While the peasants of the Farmers' Law let herds into their parcels of land when all harvests had been gathered, they also made use of woods for pasturage.²¹³ The lack of rich alluvial plains in many of the provinces forced the peasant in some instances to continue the old practice of mountain pasturage. Leo the farmer, in the Life of Saint Paul of Latros, left his goats near the Saint's cave and went back down into the plain to cut his grain at harvest time.²¹⁴ When Constantine VII complained that the sale of mountain land might injure one's neighbors he indirectly suggested that the use of such pasturage may have been widespread where Mediterranean conditions of soil obtained.²¹⁵ Thus in some regions the peasant had perforce to deprive his arable lands of manure, a practice all the more dangerous since the small farmer was generally unable to stock his lands properly. Lacking the financial resources and fodder to support a herd, he might beg from kindly saints a single ox when his own sickened and died. The herds of swine or smaller animals, so often guarded by small children, could never provide the manure that larger animals would have supplied in abundance.²¹⁶

While it would not be difficult on the basis of such evidence to condemn Byzantine agriculture as backward and unprogressive, for two reasons criticism of this nature misses the point. Had the peasant of Western Asia Minor, the Thraco-Macedonian littoral, or Greece, ventured to use the northern overturn plow for his spring labors, he would quickly have found that the hot sun baked out the precious moisture the clods contained. A recent student of east European and Middle Eastern agriculture has suggested that manure may be of no great advantage under dry-farming conditions.²¹⁷ Given Mediterranean soils and

²¹⁰ *Vita Theodori Studitae*, c. vii (Migne, *PG*, 99, col. 124).

²¹¹ P. Koukoules, *Private Life of the Byzantines*, V, p. 255. See Theophanes Cont., *De Michaelē Amor.*, c. iv (ed. Bonn, pp. 43f.); *Vita Lazari*, c. ccix (*Acta SS.*, Nov. III, 572).

²¹² Bréhier, *Civilisation byzantine*, pp. 171f. For the seventh century see the tools mentioned in the Νόμος Γεωργικός, cc. xxii, lxii, ed. W. Ashburner, "The Farmer's Law," *Journal of Hellenic Studies*, XXX (1910), pp. 100, 105.

²¹³ "Farmer's Law," cc. xlv, lxxviii (ed. Ashburner, *op. cit.* pp. 103, 107).

²¹⁴ *Vita Pauli in monte Latro*, c. xiii (ed. *AnBoll*, XI [1892], p. 45); *Vita Lazari*, c. ccxxxv (*Acta SS.*, Nov. III, 581).

²¹⁵ *Nov. constt. imperatorum post Iustinianum*, Coll. III, nov. vi (A.D. 947), ed. Zachariä, *Jus Gr.-R.*, III, 256.

²¹⁶ *Vita Ioannicii*, c. ii (*Acta SS.*, Nov. II, 333); cf. *Acta Davidis*, c. iv (*AnBoll*, XVIII [1898], p. 214); *Vita Eustratii*, c. xxv (ed. Papadopoulos-Kerameus, *Analecta*, IV, p. 384); *ibid.*, c. xiii, p. 377; *Vita Philareti eleemosynarii*, ed. Fourmy and Leroy, p. 119.

²¹⁷ D. Warriner, *Land and Poverty in the Middle East* (London, 1948), p. 123; cf. C. E. Stevens, "Agriculture and Rural Life in the Later Roman Empire," *Cambridge Economic History*, I (Cambridge, 1941-), p. 94.

climates, agricultural practice in the Byzantine Empire demanded the investment of a large amount of labor, together with the most careful use of the resources at its command.

Although the dramatic struggle of the poor and the powerful has led us sometimes to forget it, the Byzantine rural classes—whether peasant or large landowner—never forgot that success depended upon work, tenacity, and knowledge. Articles in the Farmer's Law required that the land be carefully plowed, that vineyards be dug, dug again, dug yet again and fenced about,²¹⁸ and the owners of large estates, to judge from the composite picture drawn from the lives of the saints, never left such matters to chance or to the operation of law. Nikon was sent out by his father to examine the family estates; the parents of Luke the Stylite were wise in agricultural lore; the father of Luke the Younger, a very wealthy man, personally oversaw his estate; when fortune failed him, Philaretus turned his own hand to the plow.²¹⁹ Even an emperor, Constantine IX, brought soil from the mountains, transplanted trees, made sterile fields into fertile parks. According to Psellus, Constantine took a personal interest in all these operations, and the phrases the historian uses suggest that the Emperor was by no means ignorant of economic rationalization, selective breeding, labor-saving processes, and the suppression of fallow.²²⁰

Popular belief attributed similar knowledge to that fascinating man, Leo the Mathematician. Appointed Archbishop of Thessalonica, Leo arrived in the city at a time of famine and distress. By astronomical calculation he advised his people of the proper time to plant their seed. The good citizens were amazed as spring approached and the crops in the fields were plentiful.²²¹ The Patriarch Photius, a fellow-member with Leo of the intellectual circle formed around Caesar Bardas, had read ancient agricultural theory and his comment on Vindanius Anatolius is particularly worth noting:²²² "Read the work of Vindanius Anatolius...and as our own experience has shown us in many instances, it is useful for the cultivation of the land and agricultural works, perhaps the most useful of all treatises on the same subject."

Careful as Byzantine agricultural practice always was and learned as it could become on occasion, farming for subsistence rather than for the market seems to have remained its objective. Cecaumenus, cautious no less in his farming than in his fighting, urged his son to equip his estate with mills and with workshops. Grow grain, vines, trees, and look after your flocks that you

²¹⁸ For the practices, and for the crucial problems of water rights and ownership of trees, see "Farmer's Law," cc. xxxi, xxxii, lxxxiii, lxxxiv (ed. Ashburner, *op. cit.*, pp. 102, 107f.). For an interesting Marxian analysis of agricultural practice in the law—which sees, in contrast to the view expressed above, evidence of sparse occupation of the soil and extensive agricultural practice—cf. E. E. Lipshitz, "Vizantiiskoe krest'ianstvo i slavianskaia kolonizaciia," *Vizantiiskii Sbornik* (Moscow and Leningrad, 1945), pp. 96–143 (in German translation: *Byzanz und die Slaven* [Weimar, 1951], pp. 32–105, esp. 53–57).

²¹⁹ *Vita Nikonis*, ed. Lambros, p. 134; *Vita Lucae iunioris in Hellade*, c. xi, ed. AnBoll, XIII (1894), pp. 85f.; *Vita Lucae Stylitae*, c. v (ed. Delehaye, p. 200); cf. *Laudatio Philothei Opsiciani*, c. xvi (Migne, PG, 136, col. 156).

²²⁰ Michael Psellus, *Chronographia*, VI, 173–175 (ed. Renauld, II, pp. 56ff.).

²²¹ Theophanes Cont., *De Michaelis Theophili f.*, c. xxviii (ed. Bonn, p. 191).

²²² Photius, *Bibliotheca*, cod. 163, ed. I. Bekker (Berlin, 1824), pp. 106f.

may live in self-sufficiency, he counselled.²²³ The parents of Luke the Stylite were highly praised indeed when they were lauded for having lived self-sufficiently.²²⁴ Judging from agronomic analogy, Byzantine agriculture probably sought its profits from the vine and fruit trees rather than from the cultivation of cereals. These were the forms of agricultural endeavor that necessitated the greatest outlay of work and that were to be undertaken only by specially trained men. We even read of a Symeon Ampelas who won both fame and fortune from properties devoted to the cultivation of the vine.²²⁵

To sum up then, if Byzantine agriculture met the demand for grain that Constantinople, the armies, and the lesser cities imposed, it did so because the total acreage of arable land was fully exploited, an achievement traceable ultimately to the augmentation of the labor force. From many different quarters came the new hands to till the fields. The waging of successful wars led to the acquisition of numerous slaves, and the slave seems to have won new importance in the labor force of the Byzantine estate.²²⁶ Liberal policies of settlement and colonization increased the number of persons, both free and servile in status, available for work. In 762 Constantine V welcomed Slavic refugees from the Bulgar Empire, establishing them along the Artana in Bithynia. It was a settlement more massive and probably more permanent than the military colony of "special people" that Justinian had founded in the Opsician theme.²²⁷ Peoples from the eastern frontiers were brought into Thrace, and to judge from the gift that the future Leo III presented to Justinian II, their life there must have been a prosperous one.²²⁸ Money for land and grain for seed were given to the Saracen prisoner who consented to receive baptism. In turn, the father of the family who agreed to accept such a one as son-in-law enjoyed three years' exemption from taxes on head and hearth.²²⁹ Indelicate methods were sometimes employed as well, as the widow Athanasia learned when an imperial edict ordered her to accept a barbarian as husband.²³⁰

From the coasts and islands came refugees to swell the population of the inland districts.²³¹ Their reception was not always cordial, and an episode in the Life of Luke the Younger demonstrates how necessary and effective was

²²³ Cecaumenus, *Strategicon*, cc. lxxxvii, lxxxviii (ed. Vasilievsky and Jernstedt, p. 36).

²²⁴ *Vita Lucae Stylitae*, c. v (ed. Delehaye, p. 200).

²²⁵ Leo Diaconus, VII, 1 (ed. Bonn, p. 113); a professional vintner in *Vita Lazari*, c. xix (*Acta SS.*, Nov. III, 512).

²²⁶ See "Farmer's Law," cc. xlv-xlvii (ed. Ashburner, *op. cit.*, p. 103); Cedrenus, ed. Bonn, II, 130, 207, 341; Leo Grammaticus, ed. Bonn, p. 258; *Vita Michaelis Maleini*, c. xi (ed. Petit, *ROC*, VII [1902], pp. 557f.); *Vita Andree Sali*, sec. 1 (*Acta SS.*, May VI, 5); *Vita Pauli in monte Latro*, c. iii (ed. *AnBoll*, XI [1892], p. 23); *Vita Athanasiae Aegineticae*, c. xvi (*Acta SS.*, Aug. III, 174), and the references above, notes 84, 85.

²²⁷ Theophanes, ed. de Boor, I, 364, 432; Nicephorus, ed. de Boor, p. 36. For contrasting views on the extent and significance of these settlements see P. Charanis, "The Slavic Element in Byzantine Asia Minor," *Byzantion*, XVIII (1948), pp. 69-83, and Ostrogorsky, *Byzantine State*, pp. 116f., 150.

²²⁸ Theophanes, ed. de Boor, I, 391, cf. 422, 364, 365, and for later settlements under Theophilus, Leo Grammaticus, pp. 215, 231f.

²²⁹ Constantinus Porphyrogenitus, *De cerimoniis*, II, 49 (ed. Bonn, I, 695).

²³⁰ *Vita Athanasiae*, c. ii (*Acta SS.*, Aug. III, 170).

²³¹ See, e.g., Cameniatas, ed. Bonn, p. 504; *Acta Davidis*, c. xviii (ed. *AnBoll*, XVIII [1899], p. 232f.); *Vita Pauli in monte Latro*, cc. ii, viii (ed. *AnBoll*, XI [1892], pp. 20f., 33); *Vita Athanasii ep. Methonensis*, c. iv, ed. A. Mai, *Novae Patrum Bibliothecae*, IX, pt. 3, pp. 34f.

the work of the imperial bureaucracy in creating a home for such persons.²³² Luke's grandfather had come down to Castorium in Thessaly, and God, reports Luke's biographer, had been good to him, and his flocks and herds had prospered. Perhaps for this very reason the villagers greeted him with suspicion and hostility, and it was only when he was armed with the authority of an imperial edict that he could settle on the land with his fellow refugees. Properties were divided up, concludes the biographer, and truly miraculous peace and happiness reigned from that time on. This we may doubt, but the episode reveals, better than any other, what migrations and settlements meant in human terms.

An expanding population, resulting from a surplus of births over deaths, played as large a role in rural as it did in urban expansion. Certainly by the tenth century, and probably before, isolated freeholds (ἀγρίδια) or large estates (προόστεια) developed out of nucleated villages. It is the origin of these separate settlements that interests us particularly, and the *Treatise on Taxation* fortunately offers precise and interesting information on their origin. A peasant often left many children at the time of his death, to some of whom he would have assigned his properties within the village; to some his properties outside. Those whose share lay outside very likely did not wish to remain far from their property, and so moved out to it, built a house, and improved the land. Others may have had many slaves or cattle, some may have felt crowded by evil neighbors; they, too, moved outside the village to improve their land and to enjoy the space of a larger undertaking.²³³ Thus anonymous men from the villages joined monastic heroes such as Lazarus, Athanasius of Athos, and Dorotheus of Thrace. Trees were planted and precious streams of water diverted to irrigate them. The forests were cut back, water mills erected, boundaries carefully marked, and harvests grown and gathered with plow, hoe, and sickle.²³⁴

While we cannot estimate the extent of arable land, evidence drawn from hagiography (and confirmed in documents of a more official nature), seems to justify crediting Byzantine agriculture with turning back a frontier, attacking with determination and ingenuity the encroachments of wood and waste. Such a conclusion, to be sure, implies an estimate of the Byzantine rural achievement that differs from that usually offered. Byzantinists have concentrated intently on the struggle between the powerful and the poor, forgetting that this was a society of success as well as of failure. Without doubt there were many who "went to the wall" as did Philaretus or the father of John Psichaites.²³⁵ But there were others as well; had Byzantium not been as much a society of winners as of wasters, it would never have survived.

²³² *Vita Lucae Helladis*, c. iv (ed. *AnBoll*, XIII [1894], pp. 83f.).

²³³ F. Dölger, *Beiträge zur Geschichte der byzantinischen Finanzverwaltung besonders des 10 und 11 Jahrhunderts* (Leipzig, 1927), p. 115.

²³⁴ *Vita Lazari*, c. xxxiv (*Acta SS.*, Nov. III, 520); *Vita Lucae Helladis*, Migne, *PG*, 111, col. 464; *Vita Dorothei*, c. x (Migne, *PG*, 120, col. 1064); *ibid.*, c. xvi (Migne, *PG*, 120, col. 1072); *Vita Athanasii Athonitae*, cc. xxv, xxvi, edited in *AnBoll*, XXV (1906), pp. 35f., 49, and *passim*. Cf. *Vita Theodori Studitae*, c. vii (Migne, *PG*, 99, col. 124); *Theodori Studitae, Oratio XII*, 11 (Migne, *PG*, 99, col. 814).

²³⁵ *Vita Ioannis Psichaitae*, c. ii, ed. P. van den Ven, "La vie de s. Jean le Psichaite," *Le Muséon*, N. S., III (1902), p. 105.

IV. CONCLUSION

The solution to the problem posed in this study has proven to have been one of interlocking changes within the categories of demand and supply. If the fifth century is taken as a point of departure, it is possible to delineate for that age a grain economy that had to be conducted under imperial auspices on a Mediterranean-wide basis for the benefit of the greater cities and the expeditionary armies. When coupled, during the sixth century, with the increasing strain of the military effort, urban demand threatened continually to exceed an agricultural production already hampered by certain serious deficiencies.

Change came at the end of that century not through the application of deliberate remedies to weaknesses within the productive sector of the economy, but rather through a diminution and deconcentration of the two great demand factors. Considering certain conscious imperial policies, and, even more, the impact of disease, we have every reason to believe that the need for grain was far less in the Constantinople of Maurice than it had been for generations preceding his reign. Ironically, the very weakness of Maurice and the other emperors of the late sixth century helped to ensure survival after the crises of 619 and 641. The army that faced the Persians and the Arabs had learned to find what grain it needed in the regions nearest it. Supplies from Egypt, we may suspect, were rarely found on the Euphrates or Danube frontier even before that province was lost to the Empire.

Since neither Sicily nor Africa could compensate in full measure during the seventh and eighth centuries for what had been lost with Egypt, it was fortunate that demand both at Constantinople and among the military remained at a low level. Resources were carefully husbanded; then and later the authors of handbooks of strategy were greatly concerned lest an excessive concentration of troops in one locality overwhelm agricultural resources that were to be shared among the cities.

By the beginning of the ninth century, the worst hardships were past. The producing population became ascendant as forest and waste were cut back in the areas of Thrace and Eastern Macedonia, and in Western Asia Minor, where Constantinople had then to turn for its grain. Transportation facilities were adequate; the possibility of an increased local demand constituted no threat, and in fact it might actually have declined; in some quarters agricultural technique or experiment remained at a level that justifies its being compared with the best classical agronomic theory. Yet, in none of these respects do the sources permit us to speak with assurance of an *adjustment*, of a change contrasting clearly with the economy of the fifth or sixth century. If supply increased, its greater quantity was the result primarily of many more hands—free and servile alike—to work the fields. So numerous were the hands, so scant the resources, that a historian has recently described medieval Byzantine rural society as caught up continually in a struggle for the

land.²³⁶ As a consequence of these population pressures, the amount of fallow land may have diminished in contrast to its extent in the fifth and sixth centuries. Certainly, the *epibole* of the tenth century was, if not a totally different fiscal device, at least not at all the burden Procopius described.²³⁷ It was well that the labor force had increased. The tenth century saw Constantinople reach a climax in its medieval growth, while the emperors adopted a military policy that strained the forces of production to the utmost. A new era was about to begin: one as troublesome for the grain economy as for many other sectors of Byzantine life.

APPENDICES

A. THE POPULATION OF CONSTANTINOPLE

The estimate given in the text above is based upon the following factors:

1. A reconsideration of the definition of the 4,388 *domus* listed in the *Notitia Urbis Constantinopolitanae*. They do not seem to be—as A. Andréadès, “De la population de Constantinople sous les empereurs byzantins,” *Metron*, I, 2 (1920), pp. 68–120, and others considered them—exclusively senatorial dwellings, but rather private detached houses. See, e.g., *Codex Theodosianus* VII, 8, 8 (400); XVI, 2, 22 (420). If such houses could contain members of the lower classes as well, then there is no reason to assume that the *domus* count indicates a senatorial class much larger than that of which contemporary Rome could boast. Nor is it necessary, in consequence, to conclude that the proletarian population must have been inflated to a comparable degree. For the Byzantine house, see Ph. Koukoules, Περὶ τὴν βυζαντινὴν οἰκίαν, Ἑπετηρίς Ἑταιρ. Βυζ. Σπουδῶν, XII (1936), pp. 76–138.

2. A calculation by planimeter of the city's area, using the maps in R. Janin, *Constantinople byzantine* (Paris, 1951), and A. M. Schneider, *Byzanz: Vorarbeiten für Topographie und Archäologie der Stadt*, Istanbuler Forschungen, VIII (Berlin, 1936). Constantinople within the Theodosian walls embraced 14.3 sq. km. (1,430 hectares), less than half the extent of Paris in 1815 and about the size of Rome within the Aurelian walls. Of the total, about 700 hectares lay within the thinly populated XIVth region. Judging from the *domus* count in the *Notitia*, 68% of the population (i. e., 3,522/4,388 *domus*) lived within the 375 ha. of the first ten regions. Assuming the total population to be 800,000 (a conservative estimate for Rome made by A. von Gerkan, “Die Einwohnerzahl Roms in der Kaiserzeit,” *Mitteilungen des Deutschen Archäologischen Instituts: Römische Abteilung*, LV [1940], pp. 172–173), and applying the proportion, we would arrive at a population density of 1,370/ha. in an area where already much of the land was devoted to public buildings and palaces. Among modern European cities, only the 88.5 ha. of the port area of Naples in 1881 approached this figure. So G. Pardi, “Napoli attraverso i secoli,” *Nuova rivista storica*, VIII (1924), pp. 193–195. Unlike the tenements of Naples, the houses in Constantinople seem never to have exceeded four or five stories in height.

3. The XIVth region to the west was never heavily populated and thus formed a favorite location for monasteries. From R. Janin, *La géographie ecclésiastique*, pt. 1, vol. 3: *Les églises et les monastères* (Paris, 1953), the following list of locations of monasteries (IV to IX centuries) may be compiled: Lycus and Exokoinion, 15; Blachernae, 5; Dexiokratae, 9; Deuteron, 3; Psamathia, 10; Golden Horn, 6; Propontis, 5; eastern extremity, 6.

²³⁶ G. Rouillard, *La vie rurale dans l'Empire byzantin* (Paris, 1953), pp. 181–189. Demographic trends are also emphasized by Lemerle, “Histoire agraire,” *RHist*, CCXIX, pp. 63 ff., who finds early evidence of increasing land-hunger in the “Farmer's Law.”

²³⁷ So F. Dölger, *BZ*, XXXVI (1936), pp. 157–161, whose point of view is indicated by the title of an earlier study: “Das Fortbestehen der Epibole in mittel-und-spätbyz. Zeit,” *Studi Albertoni*, II (Padua, 1934), pp. 3 ff. See Appendix D.

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4. The crucial and continual water shortage would have constituted an effective outer limit to population growth. See Procopius, *Anecdota*, xxvi, 23 (ed. Loeb, VI, pp. 308f.), and Joannes Malalas, *Chronographia*, ed. Bonn, p. 492; for discussion: R. Meyer, *Byzantion-Konstantinopolis-Istanbul: eine genetische Stadtgeographie*, Akademie d. Wissenschaften, Wien: Denkschriften, Phil.-Hist. Klasse, 71, 3 (Vienna, 1943), p. 5.

B. SOURCES OF SUPPLY BEFORE 619

In the absence of any comprehensive study of supply within the later Roman Empire—since Rostovtzeff's "Frumentum," Pauly-Wissowa, *Real-encyclopädie der classischen Altertums*, VII, cols. 126–187—the following indications may be offered, based particularly upon the sources for the period immediately preceding the loss of Egypt. Mention may be made of the survey by G. Richard, "Le problème du blé à Byzance," *Information historique*, XIX (1957), pp. 93ff., which, for the period under review here, is concerned chiefly with matters of fiscal policy.

Egypt, as we have seen, was the major granary; although local disturbances may have rendered its deliveries less predictable under Tiberius, Maurice, Phocas and Heraclius (see R. H. Charles, ed. and trans., *The Chronicle of John, Bishop of Nikiu* [London, 1916], *passim*, esp. pp. 8, 15, 21, and the commentary of G. Rouillard, *L'administration civile dans l'Égypte byzantine*, 2nd ed. [Paris, 1928], pp. 174f.), the direct statement of Nicephorus (ed. de Boor, p. 12), leaves no doubt that the events of 619 were severely felt at Constantinople: "In addition to these things, the bitterness of famine assailed the state. For Egypt did not deliver the rest (τὸ λοιπὸν) and the result was that the greater part of the emperor's grants of grain ceased."

Yet, as Nicephorus' own phrasing suggests, and as the laws on *coemptiones* further indicate (C. Th. XIV, 16, 1 and 3, and *Novellae imperatorum post Iustinianum*, Coll. I, nov. xii, 6, [ed. Zachariä, *Jus Gr.-R.*, III, 29f.]), Constantinople enjoyed secondary sources of supply as well. In the fourth century, Africa was bound to support the city and those eastern provinces where military demand might exceed local resources (C. Th. XIII, 9, 2). While the establishment of the Vandal kingdom undoubtedly interrupted these shipments, after Justinian's reconquest arrangements similar to those of the fourth century seem once again to have been in effect. When Heraclius commandeered African ships for his revolt against Phocas, the diversion of shipping caused a famine at Constantinople (Theophanes, ed. de Boor, I, 296; cf. Procopius, *Anecdota*, xxv, 7–10). In fact, civilian as well as military supply was organized on a Mediterranean basis. To Sicily the citizens of Thessalonica applied in 597 (*Miracula S. Demetrii*, sec. 74 [Acta SS., Oct. IV, 131]), as did the patriarch of Alexandria in 615 (*Vita Ioannis eleemosynarii*, c. xiii, ed. H. Gelzer, *Leontios von Neapolis Leben des Heiligen Johannes* [Freiburg im/Br., 1893], p. 27.) To Rome in the fourth century, possibly to Constantinople in the seventh century, Macedonia upon occasion exported grain. (Symmachus, *Ep.* III, 55, ed. O. Seeck, *MGH, Auct. Antiq.*, VI, 1, [Berlin, 1883], p. 88, and a curious detail connected with Heraclius' voyage from Africa to Constantinople: Eutychius, *Annales*, trans. R. Pococke, Migne, *PG*, 111, col. 1085.) For military supply on a Mediterranean basis, see above, pp. 92f. and refs.

There are a few indications of export from regions of the eastern Empire closer to Constantinople. In Thrace, Peter Barsymes made *coemptiones* after the plague of 542, but, in Procopius' terms, they were not enough. (*Anecdota*, xxii, 17f.) The fields of Thrace adjacent to Constantinople were given over to agriculture in the sixth century, being inhabited by a peasant class to whom Belisarius turned for troops in 558 (Agathias, V, 16 [ed. Dindorf, *Hist. Gr. Min.*, II, p. 374f.]). Whether they produced grain or, more probably, vegetables and wine we do not know. It should be noted, too, that the reserves it was able to stock sometimes permitted the city itself to act as an emergency granary for its hinterland. In 375, when invasions forced the peasants to abandon their fields and seek refuge in *castella*, the monk John sought and obtained the necessary supply from "magnates" resident in Constantinople. (Callinicus, *De vita Hypatii*, ed. Seminarii philologorum Bonnensis sodales [Leipzig, 1895], pp. 64f.)

North of the Danube there is little evidence of agricultural activity in the earlier part of the period; upon occasion, in fact, the Empire seems to have supplied or exported grain rather than

to have imported the commodity. (See, e.g., for the Huns: E. A. Thompson, *A History of Attila and the Huns* [Oxford, 1948], p. 137; for the Kutrigurs: Procopius, *Bellum Gothicum*, IV, xix, 16 [ed. Loeb, V, 248–250].) Relationships changed with the appearance of the Slavs early in the sixth century and with their submission to Avar power after the middle of the same century. The former were agricultural peoples, and the *Strategikon* of Maurice (XI, 5 [ed. Scheffer, p. 282]) emphasizes the quantities of supply they produced early in the seventh century and the facility with which it could be transported into the Empire: “Do not waste . . . the supplies to be found in the land. Take care to transport them into your own land by boats or animals. Since their rivers mingle with the Danube, transport by boat is easily effected.” When Maurice ordered his commander Peter, in 602, to lead his troops into winter quarters across the Danube, thus relieving the pressure on the Empire’s supply, he might well have been acting on the basis of the information to be found in the *Strategikon*. (Theophylactus Simocatta, VIII, 6 [ed. de Boor, p. 295].) Priscus had received supply from the Avar khagan when the siege at Tomi had reduced his own troops to starvation (*Ibid.*, VII, 13, p. 267f.). On the agricultural capacities of the Slavs see F. Dvornik, *The Slavs: Their Early History and Civilization* (Boston, 1956), pp. 53ff., and in greater detail, L. Niederlé, *Manuel de l’antiquité slave*, II (Paris, 1923–1926), pp. 184–210.

According to Rostovtzeff, “Frumentum,” col. 138, after its foundation Constantinople laid primary claim to the slight amount of grain still produced on the north shore of the Black Sea in the hinterland of the Greek cities. Possibly it is to exports from this region that Socrates referred when he noted (371) that the Euxine furnished the city with grain “to any extent it may require” (*Historia ecclesiastica*, IV, 16 [Migne, PG, 67, col. 501]).

In the latter half of the sixth century the eastern shore of the Black Sea seems, oddly enough, a likelier candidate than the northern littoral for the role of Constantinople’s supplemental granary. Colchis, the land of the Lazi, witnessed a marked advance in material culture under Justinian which may be gauged by the contrasting monopolies instituted there early and late in the Emperor’s reign. Prior to 535 an important customs station had been erected at Petra where John Tzibus exercised a monopoly over the import of bread, salt, and other commodities (Procopius, *Bellum Persicum*, II, xv, 11 and 16 [ed. Loeb, I, 388, 406]). It was, Procopius remarked, a land lacking in all good things, and we may assume that its initial importance to the Empire was strategic. Justinian subsequently made notable attempts to civilize the wild peoples and their tough land, constructing roads and churches, as well as instituting agricultural settlements. (Procopius, *De aedificiis*, III, 6 [ed. Loeb, VII, 206–212]). After 556 local production was ample to tempt John the African to institute a monopoly not of imports, but of grain exports. (Agathias, IV, 22.) In 562 it was customary for the king of the Lazi to support the Sunni with offerings of grain (Menander, frg. 3 [ed. de Boor, p. 178]).

Regrettably, the sources do not permit similar generalizations for Asia Minor where potential resources were great and where Justinian’s reconstruction of roads and harbors can be expected to have increased facilities for export. (Procopius, *De aedificiis*, IV, viii, 4–7 and ix, 17–21; V, ii, 6–13, iii, 4–6, and iii, 12–15 [ed. Loeb, VII, 284, 296, 322–324, 324–326, 328].) From “all Asia” grain fleets are supposed to have come in the early fourth century to satisfy the needs of Constantine’s newly-founded capital (Eunapius, *Vitae sophistae*, p. 462, ed. and trans. W. C. Wright, *Philostratus and Eunapius* [London and New York, 1922], p. 382), but the sources of the later period fail to accord equal prominence to shipments from the western coast. At the end of the sixth century, Evagrius described abundant fields of grain in the vicinity of Chalcedon (*Historia ecclesiastica*, II, 3 [Migne, PG, 86 bis, cols. 2192f.]) in terms which recall the stores laid up by Hypatius in his monastery of Rufinus, near the same city. (Callinicus, *De Vita Hypatii*, ed. Sem. phil. Bonn. sodd., p. 104.) With Bithynia’s supply, and that of Phrygia as well, Barsymes attempted to supplement his *coemptiones* in Thrace, but the combined resources of all three regions could not suffice without those of Egypt.

Thanks to the fragmentary nature of the sources, the results of a survey of the several producing regions within or near the Empire are undeniably disappointing. That some of them exported grain to Constantinople cannot be denied. Procopius admitted that the *coemptiones* of Barsymes were not without precedent; others after him continued the unpopular levies (*Anecdota*,

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xxiii, 14 [ed. Loeb, VI, 272]). When emergency dictated, almost any region in the Mediterranean world was liable to be called upon to make up a deficit; intermittently, at least, transports from Africa seem to have been regularly organized; Thrace and Bithynia were probably most often called upon to supplement Egypt's "happy transport." At the end of the sixth century the Slavs were winning new prominence as agricultural producers, but Egypt's offerings were still of crucial importance.

C. SUPPLY FROM NORTH AFRICA AND SICILY

A survey of North Africa during the period of the Islamic conquests suggests that until the last quarter of the seventh century any possibilities of private supply from the province should not be discounted. During the initial stages of their attack, the Arabs desired chiefly men and booty won as cheaply as possible for the masters of Egypt and Syria. The Arab raids were sporadic and inconclusive in their effects on the grain-producing regions; after the attack of 647, for example, fifteen years of peace preceded the raids signalling the renewed offensive in 665. (See the survey in C. Diehl, *L'Afrique byzantine* [Paris, 1896], pp. 563-593, and the more recent, if briefer, précis of G. Marçais, *La berberie musulmane* [Paris, n.d.]). It is difficult to believe that the land could have suffered critically; Arab historians describe the rich fields of grain in Ifriqya at the time of the final conquest (Lewis, *Naval Power*, p. 70); the surplus was adequate in quantity to support the foundation and growth of cities such as Kairouan, Tunis, etc. (Else Reitemeyer, *Die Städtegründungen der Araber in Islam* [Munich, 1912]); the resources of the province were considerable enough in the middle years of the century to make its exploitation seem desirable to Constans II (Diehl, *L'Afrique byzantine*, p. 569); seals of the *commercarii* extend to the reign of Constantine IV (*ibid.*, pp. 500-502).

In the seventh and eighth centuries Sicily did not suffer complete catastrophe either. Although by the seventh century the island had become primarily the granary of Rome, on one occasion at least (between 602 and 610) the *archontes* of Thessalonica sent thither for grain to relieve a famine in their city. (See above, Appendix B.) As in the case of the North African conquests, Arab raids were sporadic, permitting a continuity of settlement in some parts of the island well into the ninth century. For the narrative, see the classic M. Amari, *Storia dei musulmani di Sicilia*, 2nd ed., I (Catania, 1936), *passim*, esp. pp. 194-209, 216, 293-300; also the study of D. C. Dennett, "Pirenne and Muhammad," *Speculum*, XXIII (1948), pp. 165-190, esp. 168-173. For a convenient summary of the Pirenne thesis, with criticisms, which reprints without documentation the work of Dennett, Lopez, Riising, and others, see *The Pirenne Thesis: Analysis, Criticism, and Revision*, ed. A. F. Havighurst (Boston, 1958). A recent interpretation, not always fair to Byzantium, is that of W. C. Bark, *Origins of the Medieval World*, Stanford Studies in History, Economics, and Political Science, XIV (Stanford, Calif., 1958), esp. pp. 5-29. While Syracuse suffered badly, Palermo, Messina, Noto, Paterno, Modica, and Ragusa maintained themselves: B. Pace, "I barbari ed i bizantini in Sicilia," *Archivio storico siciliano*, XXXVI (1911), pp. 35-45, and pertinent sections in the two studies of G. Pardi, "Storia demografica della città di Palermo," *Nuova rivista storica*, III (1919), p. 190, and "Storia demografica di Messina," *ibid.*, V (1921), pp. 28f.

From the lives of the saints, we learn that ships plied between Catania and Constantinople in the eighth century (*Vita Leonis catanensis*, cc. viii, ix [*Acta SS.*, Feb. III, 228]); in the seventh century there were *naucloeroi* at Syracuse (*Vita s. Zosimi*, *Acta SS.*, Mar. III, 837) and an influential community of Jews; at the end of the seventh and early in the eighth century Sicilian ports had replaced those of Italy on the sea routes from Constantinople as the primary ports of call: Agnellus, *Liber pontificalis ecclesiae ravenensis*, secs. 131, 136, 145, edited by O. Holder-Egger, *MGH: Ss. Rer. langobard. et ital.* (Hannover, 1878), pp. 364, 367, 372f. Constans II reorganized the Sicilian coinage and the newly-established mint at Syracuse produced and maintained a high level of gold coinage until the first part of the reign of Justinian II; towards the end of the reign of Constantine V, gold coinage again became abundant in the Syracuse mint, presumably as part of the general administrative reform after 752: D. Ricotti-Prina, "La monetazione siciliana

nell' epoca bizantina," *Numismatica*, XVI (1950), pp. 26–61, and for evidence of the more active defense of the island in the latter part of the eighth century: ibn el Athir in *Bibliotheca arabosicula*, ed. M. Amari, I (Turin and Rome, 1880–1881), p. 363. The available evidence suggests, then, that Sicily maintained production, possessed ships for the cargo, and the men to sail the ships. Relations with Constantinople were maintained on an active basis until *ca.* 680, with interruptions until 752, and consistently thereafter until the final collapse of Byzantine power.

However, it is only in references to the patrimonies of the Ravennate and Roman churches that specific information on the export of grain may be found. During the tenure of Maurus as archbishop of Ravenna (650–671) grain and other commodities were exported for the use of the church in Italy, and a money payment was offered the imperial government (Agnellus, *Liber pontificalis*, sec. 111 [ed. Holder-Egger, p. 350]). Although the papal patrimonies were more than once a source of contention between Rome and the Byzantine emperor, it is not clear whether they were valued at Constantinople for the grain they produced or (as in the case of Ravenna) for the taxes to be realized from them. See Theophanes, ed. de Boor, I, 410, and Hadrianus I, Epist. 56, Migne, *PL*, 96, col. 1218. That the "confiscation" of the patrimonies in 731 may have entailed a loss of grain at Rome is suggested by certain rearrangements in the city's supply system undertaken during the eighth century. For its grain Rome turned from the Mediterranean to *domuscultae* or agricultural settlements in its own hinterland. See O. Bertolini, "Per la storia della diaconie romane," *Archivio della società romana di storia patria*, LXX (1947), pp. 1–228; R. Vieillard, *Les origines de la Rome chrétienne* (Mâcon, 1940), pp. 110–122; O. Bertolini, *Roma di fronte a Bizanzio e ai Langobardi* (Bologna, 1941), pp. 506–512. Yet, even if some grain travelled to Constantinople, particularly after 752, it is doubtful that the quantity was at all considerable. The eventual loss of the province was treated almost with a curious indifference: Ps.-Symeon, *Chronicon*, ed. Bonn (1838), p. 622.

D. THE *EPIBOLE* AND THE WASTE LAND PROBLEM

On the *epibole*, see in addition to the materials cited above in note 28: G. Ostrogorsky, "Das Steuersystem im byzantinischen Altertum und Mittelalter," *Byzantion*, VI (1931), pp. 229–240, and the same author's further defense of his thesis in "Agrarian Conditions in the Byzantine Empire in the Middle Ages," *Cambridge Economic History*, I, pp. 196–204, which he maintains also in *Byzantine State*, p. 121. "The late Roman system of the *epibole* had provided for the compulsory conveyance of waste land to the owner of cultivated acres and consequent liability for the appropriate tax on this additional land. . . . This had now [by the late seventh century] been altered, for the tax on the fallow land was laid on the neighboring farmers, who at the same time acquired the right to enjoy the use. . . . This new regulation making the community liable for the taxes. . . appears later on under the designation of *allelengyon*. The transference of the land becomes merely a consequence of the transference of the tax." With increasing reserves of manpower that could be depended upon for working the land, the state ceased to be interested primarily in ensuring cultivation. Its major concern after the seventh century was to maintain continuity in the payment of taxes. Amplifying Ostrogorsky's arguments, Danstrup, "State and Landed Property," pp. 242–245, points out that the later Roman Empire combined two institutions by no means necessarily interconnected: the attribution of vacant land (*adiectio sterilium*) and collective responsibility for taxation. They were to be found, in fact, existing in isolation from each other first in Ptolemaic Egypt and later in medieval Byzantium. Could the arguments of O. and D. be accepted, the *epibole* legislation, and the subsequent transmutation of the practice into the *allelengyon*, might be used to trace the density of rural settlement. In contrast to a thin rural settlement in the late Roman period, after the seventh century the lands of the Byzantine Empire were more fully exploited. (So Ostrogorsky, "Agrarian Conditions," *op. cit.*, pp. 197, 202f.)

For two reasons this thesis seems to me to lack cogency, although I agree with Ostrogorsky (against Dölger) on the later interpretation of the *epibole*. 1. His analysis of the legislation of the fourth, fifth, and sixth centuries considerably oversimplifies the problem. While C. J. XI, 59 (58),

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1 and C. J. X, 3, 4 (383) support his conclusions, I cannot agree that in Nov. J. CXXVIII, 7 (545) the transfer of lands is still the primary motive. Further doubt is cast upon his conclusions by J. Karayannopulos, "Die kollektive Steuerverantwortung in der frühbyzantinischen Zeit," *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, XLIII (1956), pp. 289-322, analyzed by Lemerle, "Histoire agraire," *RHist.*, CCXIX, p. 38, note 3. 2. A distinction should be made between masterless or abandoned land and marginal or inferior land to the cultivation of which imperial policies might drive the peasant. Forced settlement of the latter seems implied in C. J. X, 3, 4, (383) and even more clearly in two laws dealing respectively with emphyteusis and inheritance: C. J. XI, 59 (58), 2 and C. Th. XI, 1, 17.

Thus, in and of itself, the *epibole* cannot be used as a conclusive index of settlement. Whenever the practice appears, it proves only that a discrepancy exists between demand and the resources available to satisfy it; we cannot always be certain whether the demand is for taxes or for agricultural produce. For evidence of increased settlement, then, we must depend upon the materials used above, possibly upon indications of increased rapacity and litigiousness, manifest in "la lutte pour la terre," described by G. Rouillard, *La vie rurale dans l'Empire byzantin* (Paris, 1953), pp. 181-189.

Perhaps the fairest and more accurate statement of the problem as it stands at the moment is that of K. M. Setton, "On the Importance of Land Tenure and Agrarian Taxation in the Byzantine Empire," *American Journal of Philology*, LXXIV (1953), pp. 238-239: "During the early Byzantine period the government had forced the landowners to take over abandoned lands by holding them responsible, under the *epibole* as we have noted, for the tax on such lands. If the landowners had thus to pay the land tax, they had best take the land also, and, if possible, put it under cultivation to minimize or avoid loss. . . . During the middle Byzantine period the system of responsibility for the taxes on abandoned land continued to fall on the unfortunate neighbor of the peasant who had fled. . . . The surtax was now called *allelengyon*. The government, however, was now chiefly interested in taxing as a source of revenue those whose own property was near an abandoned property, although here, too, the taxpayer would inevitably seek to cultivate the new lands. . . and this had become an easier undertaking in the eighth and ninth centuries because of the increased availability of agricultural labor."